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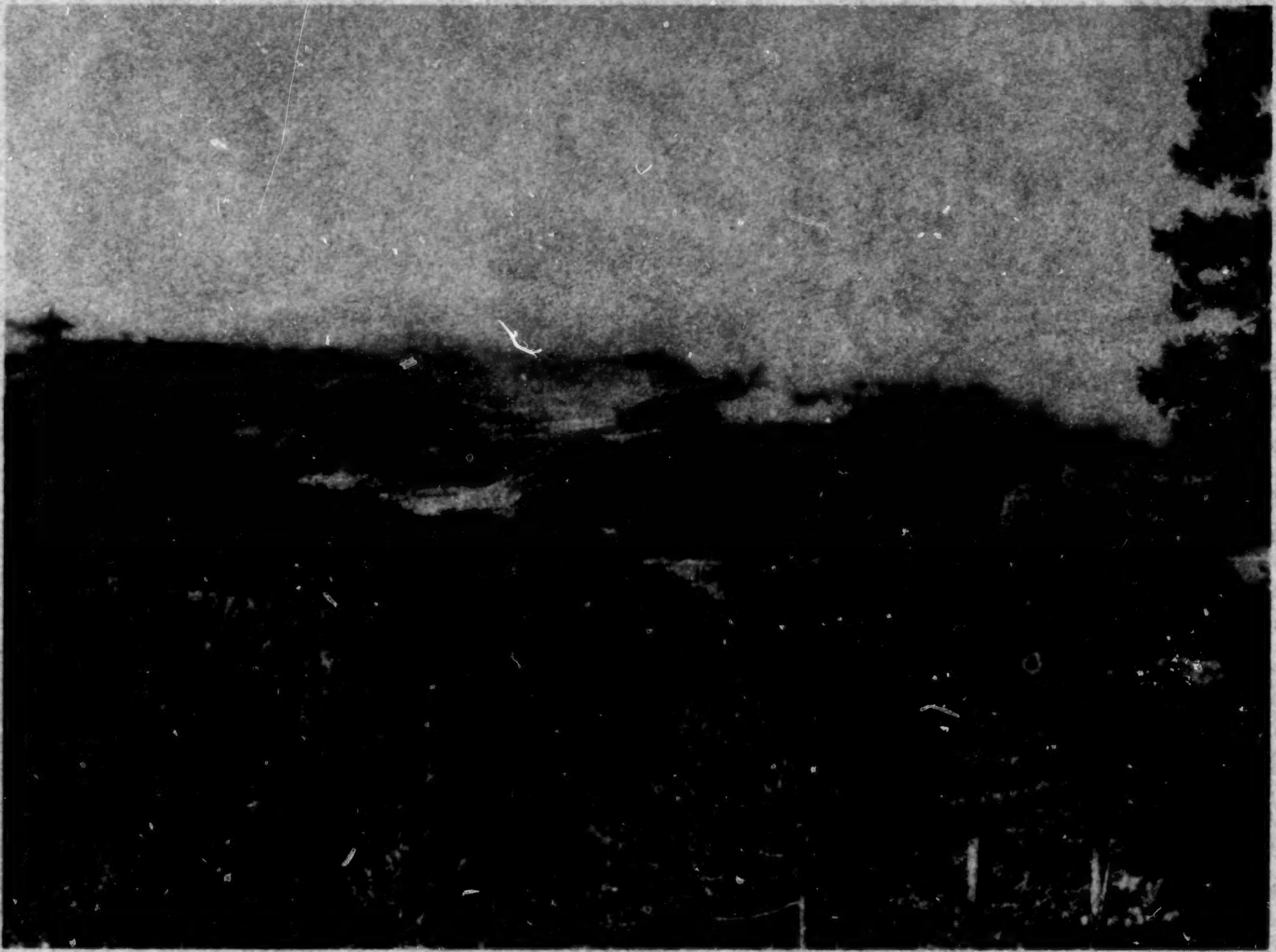
Archaeological Investigations on the Western Flank of the South-Central Cascades, Lane and Douglas Counties, Oregon

Michael D. Southard, editor

Cultural Resource Series No. 7



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ARCHAEOLOGICAL INVESTIGATIONS ON THE WESTERN FLANK OF THE SOUTH-CENTRAL CASCADES, LANE AND DOUGLAS COUNTIES, OREGON

Edited by
Michael D. Southard

CULTURAL RESOURCE SERIES NO. 7

1991

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PREFACE

This collection of papers presents information obtained from test excavations conducted at ten prehistoric sites located on lands administered by the Eugene and Roseburg Districts, Bureau of Land Management. The papers presented in this collection are minimally revised versions of administrative reports filed with the respective district offices.

Seven of the sites are located in the Upper Willamette Basin (Eugene District) and three of the sites are located in the Upper Umpqua Basin (Roseburg District). A variety of physiographic settings are represented ranging from river terraces and low elevation valley margins to mid-elevation ridgelines. Inferred site functions include a an aboriginal fishing station, hunting camps and chipping stations. No charcoal suitable for radiocarbon assay was recovered from any of the excavations. Based on the recovery of temporally sensitive tool types components at six sites have been assigned to a phase within the Willamette Basin or the Umpqua Basin cultural sequence. Middle and Late Archaic components are represented.

Excavations at the Swiftwater site in the Roseburg District were conducted by a crew from INFOTEC Research, Inc. of Eugene. Excavations at the remaining nine sites were conducted by the authors with the assistance of district personnel and volunteers. The authors of the papers in this collection gratefully acknowledge the role that these individuals played in the often arduous tasks of excavation. To these many individuals we offer our heartfelt thanks.

Michael D. Southard
Editor

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An Archaeological Evaluation of the Mill Creek No. 6 Site (35LA365) Lane County, Oregon

Michael D. Southard
District Archaeologist

Bureau of Land Management
Eugene District

June 1986

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ABSTRACT

Extensive test excavations (81.25m^2 area, 8.35m^3 of excavated deposit) at the Mill Creek No. 6 site (35LA365) located in the Mohawk River drainage have demonstrated that the manufacture and maintenance of flaked stone tools were important tasks performed at the site. Primary lithic reduction and a full sequence of biface reduction occurred at the site.

The presence of large leaf shaped projectile points and a large size notched point at the site is simlar to the mix of projectile points from the upper levels of Cascadia Cave. On the basis of this the occupation of Mill Creek No. 6 is assigned to a period around 4000 B.C. and is seen as transitional between the Early Archaic period Cascadia Phase and the Baby Rock Phase of the Middle Archaic period.

The Mill Creek No. 6 site is judged to be eligible for listing on the National Register of Historic Places.

INTRODUCTION

The Mill Creek No. 6 Site (Bureau of Land Management designation OR-09-080, Oregon Archaeological Survey designation 35LA365) is located in the Mohawk Resource Area of the Eugene District, Bureau of Land Management in western Oregon. The site consists of a medium to low density lithic scatter, only the southern fringe of which is exposed on the surface of a fire trail constructed in conjunction with timber harvest activites in 1979. Located within a one acre remnant stand of 60-80 year old timber, the site appears to have been no more than minimally disturbed by earlier logging or road construction. There is ample evidence in the subsurface deposit for the stand replacement fire which preceeded the establishment of the present conifer stand.

The purpose of the project reported here was to document the nature of the Mill Creek No. 6 Site, the extent to which its integrity has been disturbed and to evaluate the site's archaeological significance in terms of its eligibility for inclusion on the National Register of Historic Places.

LOCATION AND NATURAL SETTING

Mill Creek No. 6 is located on a south aspect lower slope overlooking the valley of Mill Creek approximately two kilometers upstream from the confluence of Mill Creek with the Mohawk River (see Figure 1.1). Located approximately four kilometers northeast of the town of Marcola (NE¼SW¼, Sec. 9, T. 16 S., R. 1 W., Willamette Meridian), the site is situated on a dissected bench at an elevation of 800 feet a.s.l. (244 meters), some 45-60 meters above the Mill Creek valley floor.

The site is within the coniferous forest community of the Western Oregon Interior Valley Vegetation Zone (Franklin and Dyrness 1973). The 60-80 year old stand occupying the site is dominated by Douglas-fir with lesser numbers of western hemlock and incense-cedar. The understory is dominated by vine maple and hazel.

ARCHAEOLOGICAL AND ETHNOGRAPHIC BACKGROUND

A number of medium to low density lithic scatters in and around the Mohawk Valley have been discovered and recorded during the past 20 years. Only one site in the Mohawk Valley has been excavated and the results of the excavation formally reported. The Halverson Site (35LA261), located approximately eight kilometers south-southwest of Mill Creek No. 6, was excavated by the University of Oregon archaeological field school crew during the summer of 1977. The site proved to be a seasonally utilized task specific location occupied during the late Archaic and early Historic periods. A single date of 160± 130 radiocarbon years was obtained from the site (Minor and Toepel 1980).

The Beebe Site (35LA216), located approximately 16 kilometers southwest of Mill Creek No. 6, was excavated by members of the U. of O. field school in the summer of 1972. Although the Beebe Site is located in the

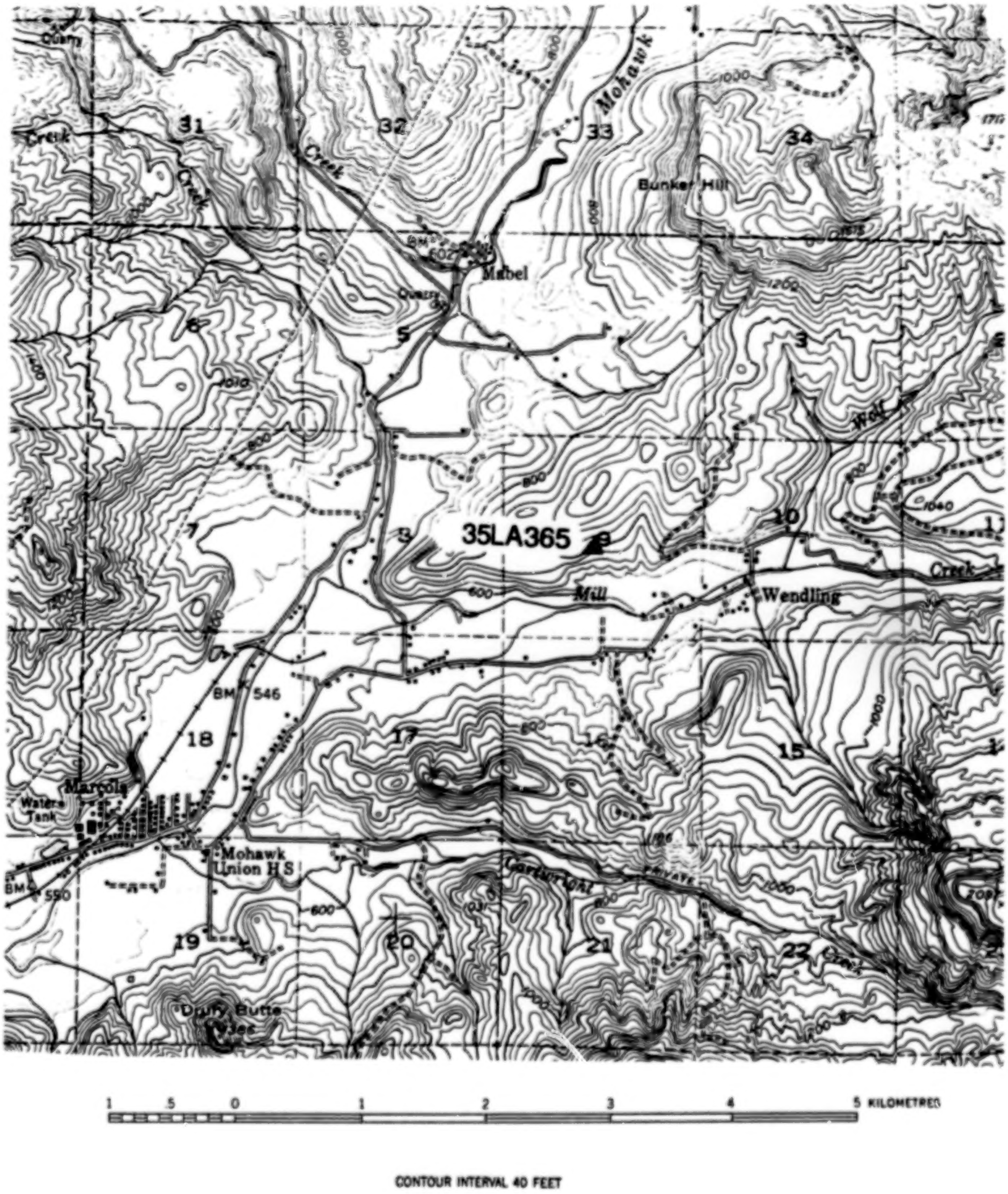

Figure 1.1. Location of the Mill Creek No. 6 site (35LA365).

Coburg Hills adjacent to the Willamette Valley, the setting is not unlike that of Mill Creek No. 6. Folansbee (1975) concluded that the Beebe Site served as a seasonally occupied locus for small groups engaged in hunting and associated support activities. Cluster analysis studies of projectile points grouped the Beebe Site assemblage with recent components from nearby sites on the floor of the Willamette Valley (Henn, Mack and Sanford 1975). These assemblages are assigned to the Late Archaic Hurd and Fuller phases under the cultural sequence developed by Minor and Toepel (Beckham, Minor and Toepel 1981:164, Table 14).

Connolly (1983) has utilized locational and site size data from recorded sites in the Mohawk Valley as part of a comparative study of aboriginal settlement patterns within three of the sub-drainages in the southern Willamette Basin. Site age was not considered in Connolly's study.

Somewhat farther afield but germane to the present report is the site of Cascadia Cave (35LIN11) on the South Santiam River some 38 kilometers to the northeast of Mill Creek No. 6. The excavations at Cascadia Cave yielded an assemblage which Newman (1966:31) identified as associated with a series of spring and summer occupations by groups of hunters and gatherers. This assemblage was dominated by leaf-shaped projectile points although large stemmed and side or corner notched points were recovered from the upper portion of the excavation. The lower component at Cascadia Cave served as the type component for the Early Archaic period Cascadia phase in the cultural sequence developed for the Willamette Basin in 1981 (Beckham, Minor and Toepel 1981). Radiocarbon assay of charcoal recovered from the base of the cultural deposit produced a date of 5960 ± 280 B.C. (Newman 1966:23).

Sites in the Mohawk Valley and those within the lower-mid McKenzie River drainage were within the range of the Mohawk band of the Kalapuya at the time of Euro-American contact (Beckham 1976; Beckham, Minor and Toepel 1981:57-58). A summary of the archaeology and ethnography of the southern Willamette Valley and the adjacent uplands may be found in the Cultural Resource Overview of the Bureau of Land Management's Eugene District (Beckham, Minor and Toepel 1981:49-81, 117-176).

FIELD PROCEDURES

Initially, 10 test units measuring 50 by 50 cm were excavated to ascertain the depth and character of the cultural deposit and to aid in delineating the horizontal boundaries of the site. Each unit was excavated in arbitrary 10 cm levels to a depth of 20 cm below the surface and the fill passed through a one-quarter inch mesh screen.

Test pit excavation did provide information regarding cultural stratigraphy and the horizontal distribution of cultural material, but did not provide a very large sample of artifacts or any temporally sensitive tool forms which might serve to place Mill Creek No. 6 in the cultural sequence of the southern Willamette Basin.

At the conclusion of the test pit phase a topographic map of the site was made which also located the 10 test pits and the site boundary. A baseline for establishing a site grid was also surveyed and a series of block excavations was begun (Figure 1.2). The purpose of the block excavations was to provide a larger sample of artifactual material and to explore the possibility that differential activity areas might be present at Mill Creek No. 6. Six block excavation units ranging in size from 3.75 square meters to 28.5 square meters and totaling 79 square meters were excavated to an average depth of 10 cm below surface. Between the test pits and the block excavations a total of 8.35 cubic meters of deposit were excavated. However, the cultural deposit did not extend more than 10 cm. below ground surface except in the fill of krotovina so a maximum of 8.1 cubic meters of cultural deposit was excavated.

STRATIGRAPHY

Stratum 1. Stratum 1 is 10± 1 cm thick. The upper 5 to 6 cm of the stratum at Mill Creek No. 6 is a dark brown (7.5YR3/2) friable silt with a very high organic content. This corresponds to the "0i" soil horizon. Twigs, fir needles, and fir cones in various stages of decay occur throughout this "0i" horizon. Charcoal bits and pieces,

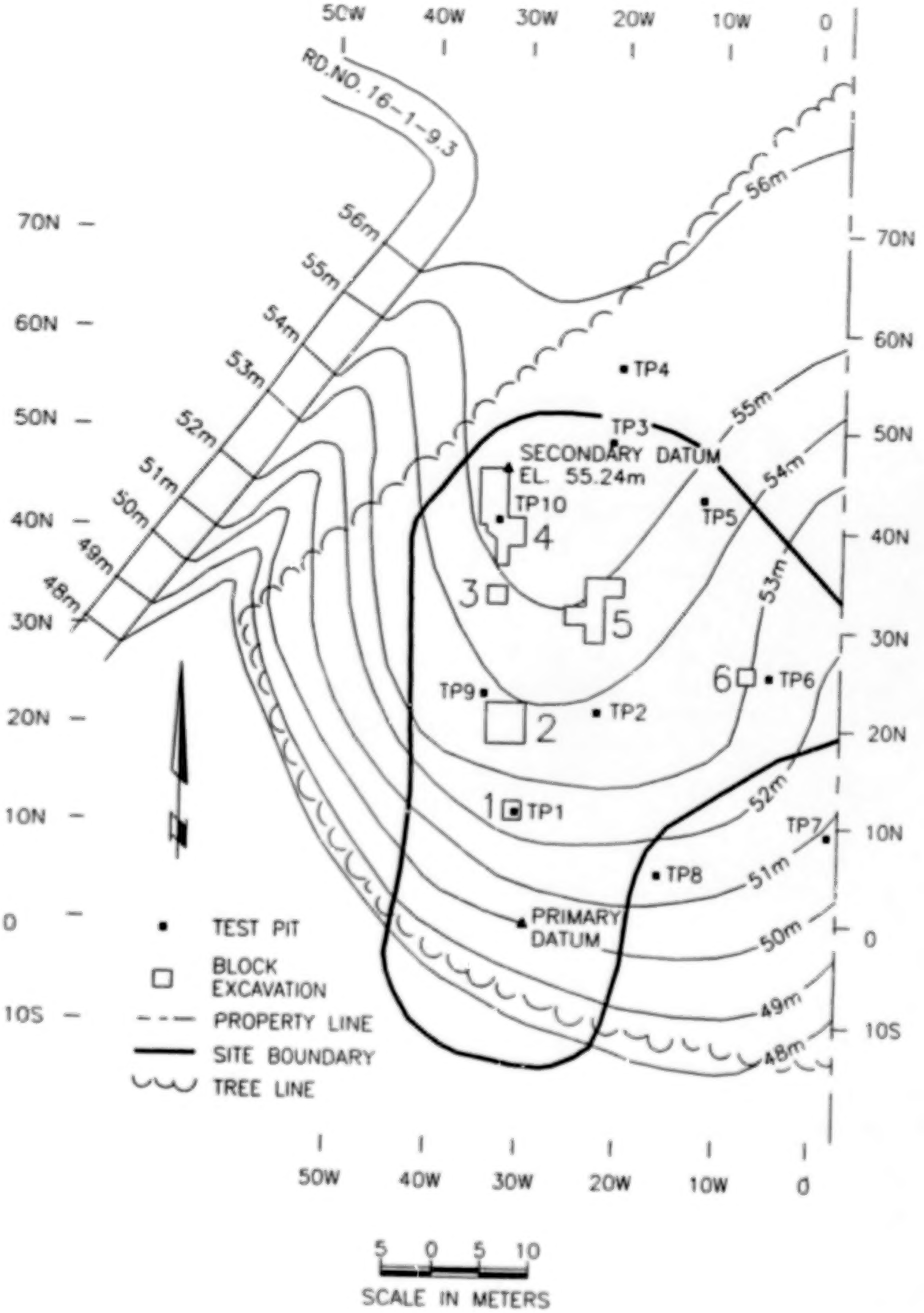

Figure 1.2. Site map of the Mill Creek No. 6 site (35LA365).

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presumably resulting from the stand replacement fire which occurred some 80-100 years ago, are abundant. Small fragments of oxidized mineral soil are also abundant. Immediately below the dark organic rich surface layer is a 4-5 cm thick layer of brown (7.5YR4/2 to 7.5YR-5/2) silt with a moderately high humic content. This corresponds to the "0a" horizon and is included in stratum 1. Charcoal bits and pieces and pellets of oxidized mineral soil are plentiful. Angular to subanglar fragments of welded tuff ranging in size from less than 1 cm to larger than 10 cm along the axis of maximum dimension are present throughout stratum 1.

Stratum 2. Stratum 2 is a compact, brown (7.5YR5/4) to light brown (7.5YR6/4), silty-clay mineral soil corresponding to the "A" horizon. The contact surface between strata 1 and 2 is uneven and numerous krotovina filled with stratum 1 are discernable at the contact surface. No charcoal is present in undisturbed stratum 2. Angular to subangular fragments of welded tuff in sizes similar to and larger than those present in stratum 1 are abundant. These are the less easily weathered fragments of the pyroclastic parent material which formed the "A" horizon. The depth of the "A" horizon was not determined.

The vertical distribution of cultural material at Mill Creek No. 6 is limited to the "0" horizon except where present in krotovina filled with "0" horizon which penetrate the "A" horizon. This observation was made initially during the excavation of the test pits and tested during the block excavation phase. In order to test the observation stratum 1 fill was removed from all krotovina visible at the surface of stratum 2 in a 2x2 meter unit. An additional 5 cm of soil was then excavated and passed through a one-quarter inch mesh screen. This procedure was carried out in two units, 18-20N/30-32W and 38-40N/30-32W, with similar results in each case. In unit 18-20N/30-32W a single CCS flake was recovered from the 0.2 cubic meter of excavated stratum 2 while two CCS flakes were recovered from the same volume of fill from unit 38-40N/30-32W. It is suggested that the three flakes recovered were from small areas of fill missed when the krotovina were cleaned out, or alternatively they had been extruded through the wall of a burrow and into the surrounding "A" horizon soil.

Evidence for Wildfire

Evidence for one or more hot, extensive fires having burned through the area of Mill Creek No. 6 was present in all of the block excavation units. In addition to the numerous charcoal fragments and pellets of oxidized mineral soil present in stratum 1, broad areas at the surface of stratum 2 were oxidized to a reddish brown (2.5YR4/4) or red (2.5YR4/6) color. These oxidized surfaces were not regular in shape nor were they associated with sub-surface features or other "regularities" indicative of intentional, patterned behavior.

Between 33-35N/22-24W in block excavation unit 5 a "feature" was noted which consisted of a roughly semi-circular shallow depression approximately 1.0 x 2.0 meters by 10 cm deep. The surface of the Stratum 2 soil in and around the depression was heavily oxidized. A mounded area of stratum 2 soil approximately 15 cm higher than the base elevation of the top of stratum 2 was present immediately west of the area of oxidized soil. This mounded deposit of stratum 2 extended to the west and north of the excavation boundary. Five irregularly-shaped, elongated areas of somewhat darker mixed fill delineated by thin bands of carbonized material at their extreme outer edges were arrayed in a generally radial pattern within the semi-circular oxidized area. When the fill of the elongate, radial features was removed it was apparent that their diameter decreased as one followed their course out and downward from the center of the oxidized area. The carbonized material delineating the perimeter of these features was identified as the carbonized cork cambium and cork which make up the epidermal layer of perennial plant roots. A mixture of strata 1 and 2 and various fire residue products (ash, charcoal) filled the open molds left by the burned out roots forming the dark fill of these sub-features. The characteristics of this "feature" are consistent with those of the stump of a wind-thrown tree which was subsequently consumed by fire. This feature is not intrepreted as the direct result of patterned, intentional behavior.

Finally, a number of the cryptocrystalline silicate pieces recovered during excavation exhibit extensive thermal spalling, crazing and color changes generally attributed to prolonged exposure to high temperatures. The number of items displaying evidence of extreme thermal alteration is too numerous and the range of items is too broad (flakes, angular waste, various tool forms) to be the result of a few failed attempts at heat treatment of lithic raw material.

DESCRIPTION OF CULTURAL MATERIALS

Sixty tools and 1,928 pieces of debitage were recovered during the excavation of test pits and block units at Mill Creek No. 6. Nine additional tools were recovered from the surface along the south edge of the site. These items were collected between September 1983 and June 1985 from the the fire trail of a clearcut unit situated immediately south of the site. Five lithic raw materials are present in the assemblage; cryptocrystalline silicate, welded tuff, obsidian, basalt and petrified wood. The majority of specimens are cryptocrystalline silicate material (83.3 percent). Welded tuff, which is locally available and may be found weathering out on the steeper slope immediately south of Mill Creek No. 6 constitutes 8.2 percent of the assemblage. Obsidian specimens, of several visually distinct types, make up an additional 7.4 percent of the assemblage. The remaining 1.1 percent of the assemblage consists of a few specimens of basalt and petrified wood.

Eighty pieces of lithic debitage recovered during test pit excavation are listed by type and provenience unit in Table 1.1. Six "tools" were recovered during the excavation of the 10 test pits. All six tools were recovered from level 1 (0-10 cm) and all were manufactured from cryptocrystalline silicate material. Table 1.2 lists these six items by type and provenience. In addition, the table lists nine tools recovered from the surface along the southern margin of the site. A list of lithic debitage and tools recovered from the six block excavation units is presented in Tables 1.3 and 1.4. Tables 1.5 and 1.6 list all tools and debitage recovered to date.

Projectile Points

Two complete or nearly complete and two fragmentary projectile points were recovered from Mill Creek No. 6. All four specimens are from block excavation units.

One complete specimen is a large, side-notched point with straight to slightly convex lateral edges and a concave base Figure 1.3,a). The item has a bi-convex cross section and lenticular longitudinal section. The specimen is 40 mm in length, 22 mm wide at the widest point immediately above (distal) the notches and is 7 mm thick at the longitudinal center of the point. Neck width is 15 mm. The material is obsidian. This point appears to be identical in form to one recovered from the upper deposit of Cascadia Cave and illustrated in Newman's report (Newman 1966, Figure 5a). These points bear some morphological similarities to both the Northern side notched type and the Elko series points discussed by Heizer and Hester (1978).

The second specimen is a lanceolate or leaf shaped point with lightly serrated, convex lateral blade margins and a rounded base (Figure 1.3,b). The hafting element is set off from the blade portion of the point by the absence of serrations and by a noticeable thinning. The specimen has a moderately thick bi-convex to diamond shaped cross section and a lenticular longitudinal section. The distal tip is missing. The "reconstructed" length is 44 mm the width is 17 mm and the thickness is 7 mm. The point of maximum width is just proximal to the longitudinal midpoint and coincides with the thickest point. The specimen is manufactured from a cryptocrystalline silicate material. This point resembles Newman's Type 3 points from Cascadia Cave (1966: 14 and Figure 4 a-e).

The two fragmentary specimens appear to be portions of leaf shaped points. One fragment is a proximal portion with a rounded base (Figure 1.3,d). The basal area is minimally differentiated from the blade portion by thinning. No serration is present on this fragment. The specimen has a thick bi-convex cross section and is manufactured from cryptocrystalline silicate material. The second specimen is a sizeable distal fragment with lightly serrated, convex lateral margins and a bi-convex to diamond shaped cross section measuring 6 mm at the point of greatest thickness (Figure 1.3,c). The item is made from cryptocrystalline silicate material. Both of the fragmentary projectile points appear to have characteristics in common with Newman's Type 3 points from Cascadia Cave.

	DEBITAGE TYPE			
	Interior Flakes & Flake Fragments	Decortation Flakes (Primary & Secondary)	Angular Waste	TOTALS
Test Pit No./Level (cm below surface)				6 (2)
No. 1 0-10 cm	6 (2)			
10-20 cm				
No. 2 0-10 cm	6	3		9
10-20 cm	1			1
No. 3 0-10 cm	4 (2)			4 (2)
10-20 cm				
No. 4 0-10 cm		1		1
10-20 cm				
No. 5 0-10 cm	5		1	6
10-20 cm				
No. 6 0-10 cm	8 (2) 1	1 1	2	11 (2) 2
10-20 cm	1			1
No. 7 0-10 cm				
10-20 cm				
No. 8 0-10 cm	1			1
10-20 cm				
No. 9 0-10 cm	7 (1)			7 (1)
10-20 cm	2			2
No. 10 0-10 cm	14 (3)	1	1	16 (3)
10-20 cm	1 (1)		1	2 (1)
TOTALS	56 (11) 1	6 1	5	67 (11) 2
GRAND TOTAL				80

( ) Denotes Obsidian
_ Denotes Welded Tuff
All other is CCS

Table 1.1. Inventory of debitage from test excavations at Mill Creek No. 6

	TEST PIT						GENERAL SURFACE			
	NO. 1	No. 3	No. 5	No. 6	No. 7	No. 10	CCS	OBS	Other	TOTALS
TOOL TYPE										
Bifacially Worked Fragment	1					1	2	1		5
Graver							1			1
Scraper				1						1
Unifacially Worked Fragment		1			1*		1	1		4
Flaked Cobble									1	1
Core			1				1	1		3
TOTALS	1	1	1	1	1	1	5	3	1	15

*This is the only item recovered from Test Pit No. 7.

Table 1.2. Inventory of tools recovered from test excavations and from the surface at the south margin of Mill Creek No. 6.

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	BLOCK UNIT NUMBER AND VOLUME OF EXCAVATED CULTURAL DEPOSIT																	
	No. 1 (0.375 m³)			No. 2 (1.6 m³)			No. 3 (0.4 m³)			No. 4 (2.865 m³)			No. 5 (2.2 m³)			No. 6 (0.4 m³)			
	CCS	OBS.	W. TUFF	CCS	OBS.	W. TUFF	CCS	OBS.	W. TUFF	CCS	OBS.	W. TUFF	CCS	OBS.	W. TUFF	CCS	OBS.	W. TUFF	TOTALS
Projectile Point											1		1						2
Point Fragment										1						1			2
Biface												1							1
Biface Fragment										7	1	1	5			1			15
Perforator														1					1
Graver				1															1
Scraper							1			1	1		2		1			1	7
Uniface Fragment							1	1		2	1		4						9
Culturally Modified Flake										5	1		3			1			10
Core				1						1			1		2				5
TOTALS				2			2	1		17	5	2	16	1	3	3		1	23

Table 1.3. Inventory of tools recovered from block excavation units at Mill Creek No. 6

	Interior Flakes & Fragments	**Primary Decortation Flakes**	**Secondary Decortation Flakes**	**Angular Waste**	**Totals**
Block Unit No. & Volume of Excavated Cultural Deposit					
No. 1 (0.375 m^3)					
CCS	**17**			**3**	**20**
OBS.	**2**				**2**
Weld. Tuff	**3**				**3**
Other					
No. 2 (1.6 m^3)					
CCS	**94**			**10**	**104**
OBS.	**9**				**9**
Weld. Tuff	**8**			**1**	**9**
Other					
No. 3 (0.4 m^3)					
CCS	**66**			**4**	**70**
OBS.	**2**				**2**
Weld. Tuff	**3**			**1**	**4**
Other					
No. 4 (2.865 m^3)					
CCS	**610**	**2**	**9**	**44**	**665**
OBS.	**61**		**1**		**62**
Weld. TUff	**57**		**5**	**9**	**71**
Other	**3**		**4**		**7**
No. 5 (2.2 m^3)					
CCS	**562**	**2**	**4**	**36**	**604**
OBS.	**42**	**1**	**2**		**45**
Weld. TUff	**48**			**4**	**52**
Other	**10**		**2**		**12**
No. 6 (0.4 m^3)					
CCS	**65**			**4**	**69**
OBS.	**6**				**6**
Weld. TUff	**17**				**17**
Other	**1**				**1**
TOTALS					
CCS	**1414**	**4**	**13**	**101**	**1532**
OBS.	**122**	**1**	**3**		**126**
Weld. Tuff	**136**		**5**	**15**	**156**
Other	**14**		**6**		**20**

Table 1.4. Inventory of lithic debigate recovered from block excavation units at Mill Creek No. 6

Bifacially Worked Objects

This category includes complete and nearly complete bifaces not classified as projectile points. Both specimens are made from welded tuff. One specimen is from block excavation unit 4 and the second was recovered from the surface along the southern margin of the site at 10.5S/27.7W. Neither specimen appears to be a finished tool, rather both represent intermediate stages of biface reduction. The specimen from block unit 4 (Figure 1.4,b) has a fairly regular plan outline, a lenticular cross section and semi-regularly spaced flakes forming a slightly sinuous lateral edge. The edge angle is approximately 60°. The specimen recovered from the surface has a somewhat irregular outline and a thick and off-center cross section (Figure 1.4,a). The item appears to have been rejected during manufacture due to excessively thick edges compounded by flaws in the material. Both items appear to correspond to pieces undergoing stage 3 of Callahan's biface reduction sequence (Callahan 1979: 10, Table 1).

Bifacially Worked Fragments

Two general classes of items are grouped in this category; what appear to be finished tools broken through use or during the final stage of manufacture, and items broken during early stages of manufacture corresponding to stages 2 and 3 of Callahan's biface reduction sequence.

Of the 20 bifacially worked fragments recovered from Mill Creek No. 6 (surface and excavations) eight appear to be fragments of finished tools. Of these eight, two are made from obsidian and six are made from cryptocrystalline silicate material. Eleven of the remaining pieces are made from cryptocrystalline silicate material and one is made from welded tuff.

Perforators

A single perforator was recovered from the site. This item features a short, pointed bit with a distinctly diamond shaped cross section (Figure 1.5,a). The specimen is obsidian and made on a broken biface.

Gravers

Two cryptocrystalline silicate flakes featuring beaked graver bits were recovered, one from block unit 2 (Figure 1.5,b) and one from the surface at the southern margin of the site. The graver bit of each was shaped by short, steep, contiguous unifacial flaking.

Scrapers

Eight specimens featuring the steep unifacial retouch characteristic of this class of tool were recovered from Mill Creek No. 6. Seven were recovered from block excavation units and one from a test pit. Two specimens are side scrapers, that is, the linear working edge is fashioned on the lateral margin of a flake. Four specimens have a convex working edge fashioned on the distal end of relatively thin flakes. One specimen has two working edges, one at the proximal end and the other at the distal end of a thick flake. The final specimen has a typical scraper bit fashioned on one end of a rejected biface. Of the eight items five are made from cryptocrystalline silicate material, two from welded tuff and one from obsidian.

Unifacially Worked Fragments

Thirteen tool fragments featuring the steep retouch characteristic of scrapers constitute the items in the class. They are presumed to be fragments of what were once complete scrapers. Nine of the items were recovered from block excavation units, two from test pits and two from the general surface at the southern end of the site. Ten of the specimens are made from cryptocrystalline silicate material and three from obsidian.

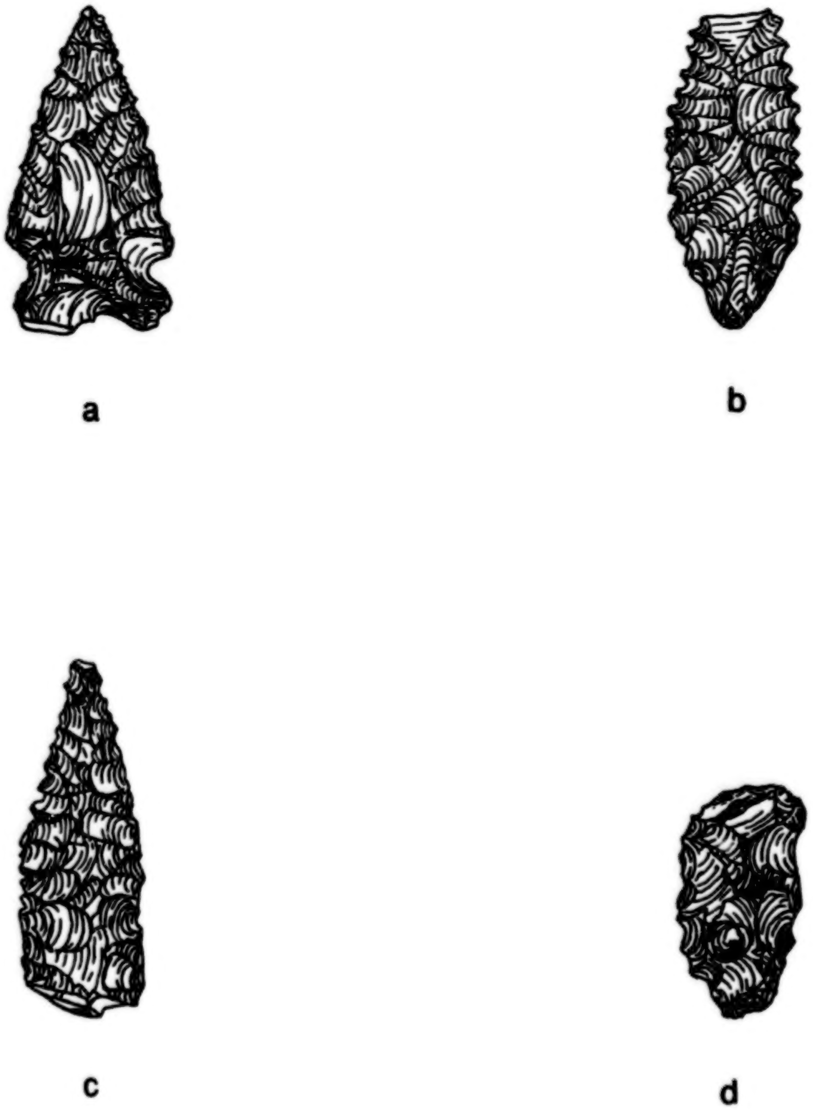

Figure 1.3. Whole and fragmentary projectile points from Mill Creek No. 6 (Items shown actual size.)

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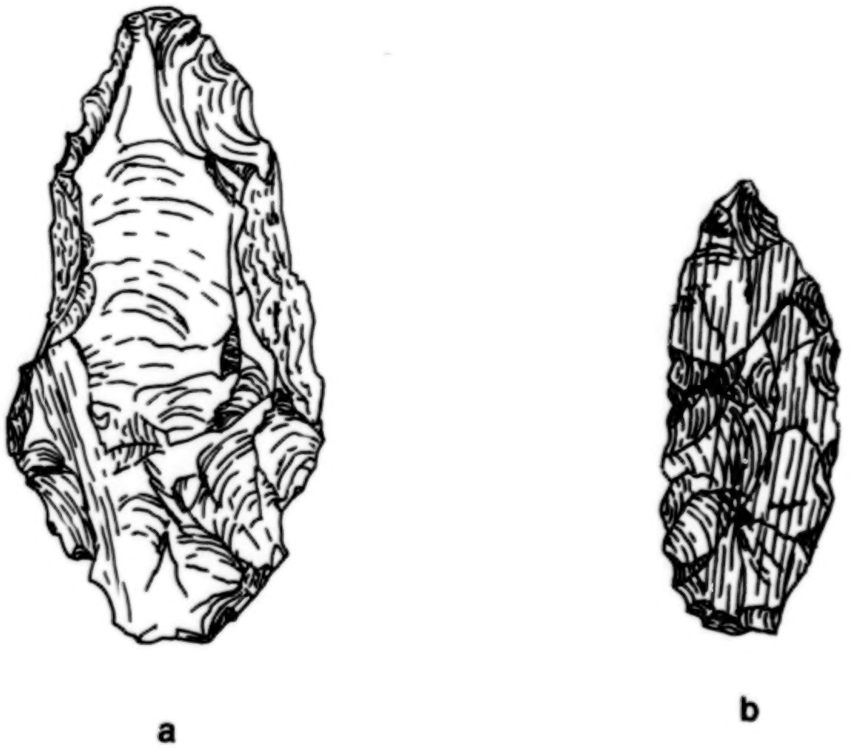

Figure 1.4. Bifaces from Mill Creek No. 6.
(Items shown actual size.)

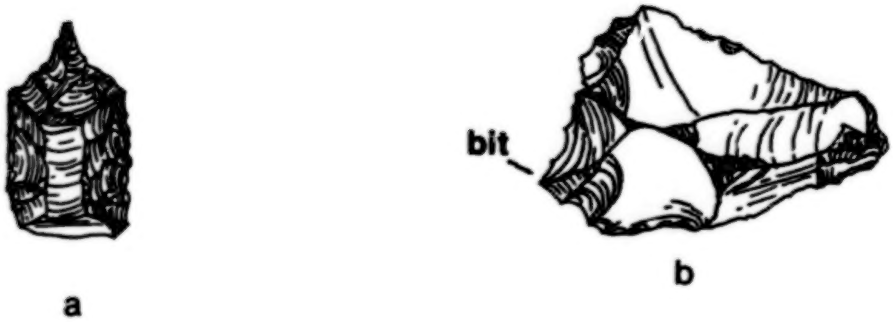

Figure 1.5. Perforator and graver from Mill Creek No. 6 (Items shown actual size.)

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Culturally Modified Flakes

This object class subsumes such earlier classes as used flakes, worked flakes, edge altered flakes, etc. The items in this class all exhibit small, usually unifacial, flaking. However, the flake scars may not form a continuous working edge and/or the retouch may not be large enough for these items to be classified as scrapers or unifacially worked fragments. It is possible that not all items in this class are tools, and indeed that some are not the result of intentional modification either through use or manufacture. Ten specimens of this object class, all from block excavation units, were recovered from Mill Creek No. 6. Nine specimens exhibit unifacial edge modification and one exhibits bifacial edge modification. Nine specimens are cryptocrystalline silicate material and one is obsidian.

Flaked Cobble

A single unifacially flaked basalt cobble with a rounded and weathered (not stream-rolled) cortex was recovered from the surface at the south end of the site. The unifacially flaked bit was formed by the removal of a minimum of six flakes based on the number of negative flake scars or portions of flake scars present on the worked face.

Cores

Eight items exhibiting multiple flake scars but lacking the regularity of form usually associated with all but the earliest stage of biface reduction (Callahan's stage 2) are included in this category of objects (Callahan 1979: 10, Table 1). Five of the specimens were recovered from block excavation units, one from a test pit and two from the surface at the south end of the site. Six of the specimens are cryptocrystalline silicate material, one is obsidian and one is welded tuff. One cryptocrystalline silicate specimen has areas of stream polished cortex present and a second specimen of the same material has areas of weathered cortex present. The obsidian specimen appears to be a small bi-polar core or spent bi-polar core. None of the other specimens exhibit regularized or consistent patterns of flake removal.

Lithic Debitage

Debitage is the residual material resulting from the manufacture of flaked stone tools. Three classes of debitage are recognized in this preliminary study; interior flakes and flake fragments (proximal and distal fragments), decortation flakes and angular waste. Decortation flakes are divided into primary (cortex present on 90-100 percent of dorsal surface) and secondary (cortex present on less than 90 percent of dorsal surface) types.

A total of 1,928 pieces of debitage were recovered from Mill Creek No. 6 (see Table 1.6). Cryptocrystalline silicate material constitutes the predominant material in the debitage inventory (83.6 percent) followed by approximately equal amounts of obsidian (7.2 percent) and welded tuff (8.2 percent). Basalt and petrified wood make up the remaining one percent.

The presence of a limited number of decortation flakes of each raw material type is interpreted as evidence for the local procurement of at least some of each type of raw material. The cortex present on the four obsidian decortation flakes exhibits characteristics of a stream-rolled cobble cortex. Small cobbles and pebbles of obsidian are present in McKenzie River gravels and were exploited as lithic raw material by the aboriginal inhabitants of the Upper Willamette Valley including those of the Mohawk Valley (Minor and Toepel 1980: 8, White 1975: 178 and personal observation). The present course of the McKenzie River is approximately 19 kilometers south of Mill Creek No. 6. Some cryptocrystalline silicate and all of the basalt decortation flakes exhibit characteristics associated with stream-rolled cobble cortex. Cobbles of both material types are present in Mill Creek which flows within 400 meters of the site. Cryptocrystalline silicate material decortation flakes without water-worn cortex are also present in the excavated sample. This is consistent with the fact that unrolled nodules of cryptocrystalline silicate material outcrop at a number of locations in the Mohawk River drainage including

Tool Class	CCS	Obsidian	Welded Tuff	Basalt	TOTALS
Projectile Points	1	1			2 (2.9%)
P.P. Fragments	2				2 (2.9%)
Bifaces			2		2 (2.9%)
Biface Fragments	17	2	1		20 (29.0%)
Perforators		1			1 (1.4%)
Gravers	2				2 (2.9%)
Scrappers	5	1	2		8 (11.6%)
Uniface Fragments	10	3			13 (18.8%)
Culturally	9	1			10 (14.5%)
Modified Flakes					
Flaked Cobbles				1	1 (1.4%)
Cores	6	1	1		8 (11.6%)
TOTALS	52 (75.4%)	10 (14.5%)	6 (8.7%)	1 (1.4%)	69 (100%)

*Includes all tools recovered from surface, test pits and block excavation units.

Table 1.5. Inventory of all flaked stone tools recovered from Mill Creek No. 6*.

Debitage Type	CCS	Obsidian	Welded Tuff	Other**	TOTALS
Interior Flakes & Flake Fragments	1482	134	136	14	1766
Primary Decortation Flakes	7	1	0	0	0
Secondary Decortation Flakes	16	3	6	6	31
Angular Waste	107	0	16	0	123
TOTALS	1612 (83.6%)	138 (7.2%)	158 (8.2%)	20 (1.0%)	1928 (100%)

*Includes all debitage from test pits and block excavation units.
**Basalt and petrified wood.

Table 1.6. Total debitage recovered from Mill Creek No. 6*.

several locations within two kilometers of Mill Creek No. 6. Welded tuff decortation flakes recovered from the site exhibit no stream rolled characteristics although cobbles of welded tuff are present in Mill Creek gravels. Good quality welded tuff nodules outcrop on the slope at the south end of the site and at other nearby locations.

Manuports

Manuports are those items in an archaeological assemblage which exhibit no evidence of intentional cultural modification or use but whose presence at the site can be explained only by their having been transported to the site by a human agent. Six cobbles with stream-rolled cortex; two of cryptocrystalline silicate material, one of welded tuff, two of basalt and one of an unidentified igneous extrusive material consitute the items in the manuport category recovered from Mill Creek No. 6. INSERT TABLE 6 PAGE HERE

SITE PARAMETERS

1. Site Boundaries

The horizontal boundaries of the Mill Creek No. 6 archaeological site seem to conform to the lower end of the summit slope and the upper, more level portion of the nose slope of the south trending spur on which the site is situated. The site extends eastward onto privately owned property for an unknown distance. The cultural desposit is estimated to cover an area of between 1,300 and 1,500 square meters on BLM administered land.

2. Depth of Cultural Deposit

The test excavation results indicate that most of the cultural debris occurs in the upper 10 cm of the deposit coinciding with the "0" horizon. The cultural debris recovered from depths greater than 10 cm appeared to be present in the fill of krotovina. Procedures carried out during the excavation of two 2 meter x 2 meter squares in the block excavation units support the contention that cultural material is limited to the "0" horizon except where present in the fill of krotovina. The "0" horizon was no more than 10 cm thick in any of the units excavated at Mill Creek No. 6.

3. Cultural Features

No cultural features were discovered in the $79m^2$ excavated at Mill Creek No. 6. This is approximately 6% of the site area located on BLM administered land. The absence of cultural features in the area excavated to date cannot be interpreted as evidence for the total absence of cultural features at Mill Creek No. 6; however, the results do suggest that if cultural features are present the incidence of occurance is low.

4. Differential Activity Areas

No evidence indicative of the presence of task specific differential activity areas was discovered during either the excavation or the analysis phase of the project. The percentages of cultural material recovered from block excavation units 4 and 5 (43.9% and 38.8% respectively) are proportionally greater than for other units when compared to the percent of the total excavated cultural deposit represented by unit 4 (36.5%) and unit 5 (28.1%). This concentration of cultural material may indicate the major activity locus of the site or it may indicate nothing more than a despositional area for lithic debris. In any case, the differences are quantitative rather than qualitative in nature.

5. Site Integrity

Only the southern margin of the site has been disturbed by recent timber harvest activities. There is no compelling evidence for an earlier timber harvest entry into the one acre area containing the site although the areas immediately to the south and west were logged sometime prior to 1930.

The nature and extent of disturbance due to natural forces has not been fully documented. Windthrow of timber with concomitant horizontal and vertical displacement of cultural material has occurred in the recent past and has undoubtedly been a factor in the more distant past. Evidence for one or more wildfires was found in each of the block excavation units. Many of the cryptocrystalline silicate items recovered during excavation exhibit the effects of exposure to extreme temperatures (crazing, pot-lid fractures, color alteration). This may place some constraints on information that can be acquired from this part of the assemblage; i.e., evidence for intentional heat treatment of lithic raw materials and accurate sourcing of lithic raw material based on color are two areas of inquiry which would be adversely affected.

A potentially more serious problem resulting from wildfire is the introduction of a large quantity of charcoal into the cultural deposit. This charcoal may contaminate samples taken from hearths or other cultural features (if subsurface features are present) and distort the results of radiocarbon assays used to date the site.

Despite these several factors, the deposit retains much of its inherent integrity. The shallowness of the cultural deposit and the apparent single component nature of the site all militate against the serious loss of site integrity due to natural actions associated with the normal life cycle of the forest.

6. Density of Cultural Materials

An average density of 245 items/m^3 of cultural deposit was calculated for the total volume of excavated deposit. Cultural density ranges from a high of 334 items/m^3 of cultural deposit in block excavation unit 5 to a low of 78 items/m^3 of cultural deposit in block excavation unit 2. (NOTE: individual unit densities were not calculated for each of the 10 test pits although they were included in the average density value calculated for the total excavated volume.)

CHRONOLOGY AND FUNCTION

The lithic assemblage from Mill Creek No. 6 consists of 97 percent debitage indicating that the manufacture and/or maintenance of flaked stone tools was an important function at the site. The presence of both primary and secondary decortation flakes in the assemblage is intepreted as evidence that some primary reduction did occur at the site. The presence of complete and fragmentary specimans of bifaces which appear to be comparable to Callahan's biface reduction stages 2 through 4 suggests that a full sequence of biface reduction occurred at the site.

The remainder of the lithic tool assemblage consists of a few carefully made tools; projectile points, a perforator or drill, and a number of quickly fashioned uniface tools and casual flake tools utilized with little or no prior modification. Hunting, initial processing of game, and the maintenance and refurbishment of hunting equipment are the range of tasks for which such a tool kit might be used. The absence of ground stone tools and grinding slabs or mortars is interpreted as evidence that no extensive processing of seeds, nuts or other vegetal foods took place at Mill Creek No. 6.

Mill Creek No. 6 was probably occupied for short periods of time by small groups on a number of occasions. There is nothing in the assemblage to indicate the season(s) when the site was occupied. The location of the site would not preclude occupation during any single season of the year.

The four projectile points recovered from Mill Creek No. 6 offer some evidence as to the date of occupation. Assemblages containing only leaf shaped points are the hallmark of the Early Archaic period Cascadia Phase in the Willamette Basin which is assigned to the period between 6000 B.C. and 4000 B.C. (Beckham, Minor and

Toepel, 1981: 165-167). The beginning date for the Cascadia Phase is based on the ^{14}C date of 5960± 280 B.C. for the initial occupation of Cascadia Cave (Newman 1966: 23).

The succeeding Middle Archaic period extending from 4000 B.C. to A.D. 200 is characterized by assemblages containing a variety of stemmed and notched points with neck-widths greater than 8 mm (Beckham, Minor and Toepel, 1981: 167). The combination of leaf shaped points and a broad-necked point at Mill Creek No. 6 is similar to the mix of point styles from the upper levels of Cascadia Cave (Newman, 1966: 11-13). On this basis the occupation of Mill Creek No. 6 is assigned to a period around 4000 B.C. The assemblage is seen as transitional between the Early Archaic Cascadia Phase and either the Lingo or Baby Rock phase of the Middle Archaic period.

SITE POTENTIAL AND SIGNIFICANCE

Mill Creek No. 6 possesses integrity and appears to meet National Register of Historic Places Criteria D (36 CFR 1202.6), "that have yielded, or are likely to yield, information important in prehistory or history". . .and as such, is eligible for listing on the National Register.

The assemblage at Mill Creek No. 6 is transitional between the Early Archaic period Cascade Phase components containing only leaf shaped projectile points and Middle Archaic components characterized by a variety of stemmed and side or corner-notched projectile points. Although the assemblage contains projectile point forms characteristic of two temporally distict phases, there can be little question that the stratigraphy and cultural sequence at Mill Creek No. 6 is much less complex than that found at the deep midden sites on the floor of the Willamette Valley which have been excavated to date. It is much simpler to isolate assemblages of roughly contempory materials at sites like Mill Creek No. 6, consequently research results have a greater degree of temporal specificity than results obtained from sites with a long record of occupation but poor stratigraphic separation of components. Mill Creek No. 6 can contribute information regarding the following three areas of inquiry; settlement patterns, lithic procurement strategies and lithic reduction technology during the Early-Middle Archaic transition period. The site may also yield data which will aid in the refinement of the cultural sequence of the southern Willamette Basin.

The apparent absence of culturally related floral and faunal remains at Mill Creek No. 6 precludes or severely limits the potential for deriving information regarding the subsistence economy or the seasonality of occupation.

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REFERENCES CITED

Beckham, Stephen Dow

1976 Indian distribution in Oregon. In Atlas of Oregon, edited by William G. Loy, pp. 6-7. University of Oregon Books, Eugene.

Beckham, Stephen Dow, Rick Minor, and Kathryn Anne Toepel

1981 Prehistory and history of BLM lands in west-central Oregon: a cultural resource overview. University of Oregon Anthropological Papers 25.

Callahan, Errett

1979 The basics of biface knapping in the eastern fluted point tradition: a manual for flintknappers and lithic analysts. Archaeology of Eastern North America, Vol. 7, No. 1.

Connolly, Thomas J.

1983 Modeling prehistoric cultural systems in the Willamette Valley: a demonstration of regional diversity. In Contributions to the Archaeology of Oregon 1981-1982. Don E. Dumond, editor, pp. 27-39. Association of Oregon Archaeologists Occasional Papers 2.

Follansbee, Julia A.

1975 Archaeological remains at the Beebe site (35LA216) in the southeastern Willamette Valley foothills. In Archaeological Studies in the Willamette Valley, Oregon, edited by C. Melvin Aikens. University of Oregon Anthropoligical Papers 8:403-424.

Franklin, Jerry F. and C. T. Dyrness

1973 Natural vegetation of Oregon and Washington. Pacific Northwest Forest and Range Experiment Station General Technical Report PNW-8.

Heizer, Robert F., and Thomas R. Hester

1978 Great Basin projectile points: forms and chronology. Ballena Press Publications in Archaeology, Ethnology and History, No. 10. Socorro, N.M.

Henn, Winfield, Joanne M. Mack and Patricia R. Sanford

1975 Chronological ordering of selected projectile point assemblages from the Willamette Valley. In Archaeological Studies in the Willamette Valley, Oregon, edited by C. Melvin Aikens. University of Oregon Anthropological Papers 8:521-548.

Minor, Rick and Kathryn Anne Toepel

1980 A preliminary report on the Halverson site (35LA261): a seasonal campsite in the upper Willamette Valley, Oregon. Paper presented at the 33rd annual Northwest Anthropological Conference.

Newman, Thomas M.

1966 Cascadia cave. Occasional Papers of the Idaho State University Museum 18.

White, John R.

1975 The Hurd site. In Archaeological Studies in the Willamette Valley, Oregon, edited by C. Melvin Aikens. University of Oregon Anthropological papers 8:141-225.

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An Archaeological Evaluation of the Cornucopia Site (35LA751) Lane County, Oregon

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District Archaeologist

Bureau of Land Management
Eugene District

September, 1986

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ABSTRACT

Test excavations and controlled sub-litter collection at the Cornucopia site located in the Nelson Creek drainage of the Middle Fork Willamette watershed have demonstrated that the site was used as a task-specific temporary camp occupied by small groups for short periods of time for the repair and maintenance of flaked stone tools. Replacement of damaged projectile armature and the manufacture of this armature are judged to be several of the tasks performed. Tasks associated with the processing of game do not appear to have been an important function at this site.

The occupation of the Cornucopia site is assigned to the Lake Archaic period (A.D. 200 - A.D. 1750) based on the similarity between projectile points recovered from this site to those recovered from dated context.

The cultural deposit is deemed to lack the necessary depth, areal extent and concentration of artifactual material to expect that additional excavation will yield significant amounts of new information. On this basis, it is determined that the Cornucopia site is not eligible for listing on the National Register of Historic Places. No additional excavation or other mitigative measures are proposed for this site.

INTRODUCTION

The Cornucopia site (35LA751) is located in the Mohawk Resource Area of the Eugene District, Bureau of Land Management in western Oregon. The site consists of a discontinuous low density lithic scatter which extends for a distance of 100-120 meters along the top of a low, west trending spur ridge in the Nelson Creek drainage. The site has not been disturbed by past logging or road construction activities; however, there is evidence for one or more forest fires which have produced adverse effects on the cryptocrystalline silicate portion of the lithic assemblage.

The purposes of the project reported here were to document the nature of the Cornucopia site, the extent to which its integrity has been disturbed and to evaluate the site's archaeological significance in terms of its eligibility for inclusion on the National Register of Historic Places.

LOCATION AND NATURAL SETTING

The Cornucopia site is situated on a low, west-trending spur ridge between two second order tributary streams in the headwaters basin of Nelson Creek. The location is approximately three kilometers upstream from the confluence of Nelson Creek with Winberry Creek (see Figure 2.1). Located 9.5 kilometers east of the town of Lowell (S 1/2 SW 1/4, Sec. 11, T. 19 S., R. 1 E., Willamette Meridian) the site is situated on a gentle west aspect slope at an approximate elevation of 1500 feet a.s.l. (457 meters) in the foothills of the Cascade Mountains.

The site is within the coniferous forest community of the Western Oregon Interior Valley Vegetation Zone (Franklin and Dyrness 1973).

Utilizing the vegetational patterns developed by Franklin and Dyrness for the Cascades and the interior valleys of western Washington and northwestern Oregon and information garnered from observations made during the early historic period, Winkler (1983) constructed four vegetation zones to approximate those present in the Middle Fork Willamette drainage at the time of historic contact. The Cornucopia site is located in Winkler's oak woodland/prairie/Douglas-fir zone. Winkler (1983:12) cites numerous references to support the contention that prior to Euro-American settlement fire played a major role in maintaining the vegetation pattern noted for this zone by the earliest Euro-American observers in the area.

The uneven aged stand occupying the site contains a few widely scattered old-growth Douglas-fir characterized by open-grown form and an occasional fire scarred base. A second component, comprising approximately 25% of the stand, consists of 80-90 year old Douglas-fir. A number of these trees also bear basal fire scars. The third

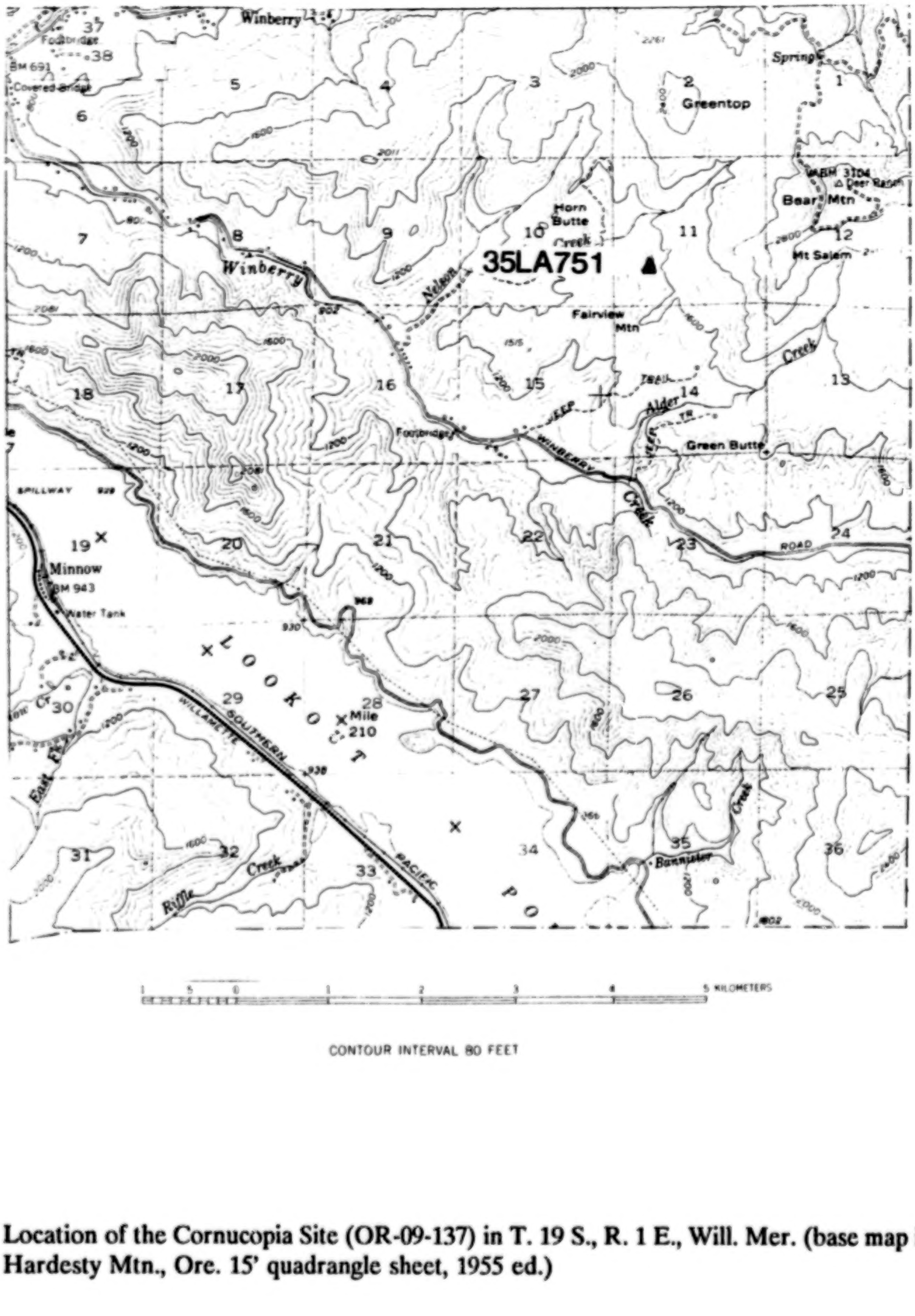

Figure 2.1 Location of the Cornucopia Site (OR-09-137) in T. 19 S., R. 1 E., Will. Mer. (base map is U.S.G.S. Hardesty Mtn., Ore. 15' quadrangle sheet, 1955 ed.)

component, comprising approximately 70% of the stand, consists of 40-50 year old Douglas-fir and western hemlock.

No fire scars were detected on constituents of this component. The hardwood constituent of the stand includes bigleaf maple, vine maple and golden chinquapin with red alder and cottonwood along the streams flanking the ridge to the north and south.

ARCHAEOLOGICAL AND ETHNOGRAPHIC SETTING

The only recent synthesis of the prehistory of the Willamette basin and the adjacent Western Cascades appears in the Cultural Resource Overview for the Bureau of Land Management's Eugene District (Beckham, Minor and Toepel 1981: 126-176). The work establishes a provisional cultural sequence for the Western Cascades consisting of three prehistoric and one historic phase to cover an approximately 8000 year period of occupation (Minor and Toepel 1981: 165-176 and Figure 22 and Table 14). In addition, upland sites are divided into two classes: base camps and task specific sites. The authors utilize site size, depth of deposit and number of tool classes present in a site collection to define the dichotomous division (Minor and Toepel 1981:131).

Prior to 1964 the Middle Fork of the Willamette drainage, including the Fall Creek and Winberry Creek drainages, was terra incognita to the professional archaeological community. In that year archaeologists from the Museum of Natural History at the University of Oregon began inventory and salvage operations in the area to be affected by construction of the Fall Creek Dam and Reservoir. Nine prehistoric sites were located and tested. One site, 35LA33, was extensively excavated.

Excavations conducted at the nine sites indicated that cultural material was limited to the upper 10 to 20 cm of the deposit at each site (Cole 1967:8-16). Collections from the nine sites consisted of a range of artifacts including projectile points, uniface items, drills or perforators, gravers, knives and bifaces other than knives, milling stones, hammer stones and other cobble tools in addition to lithic debitage. The suite of projectile points recovered consisted primarily of relatively large, broadnecked, side notched and corner notched forms as well as foliate biface or willow-leaf forms. Only two small stem and barb type points were recovered (Cole 1967, Plate I). On the basis of this collection the major occupation of site 35LA33 would now be assigned to the Middle Archaic Period (4000 B.C. - A.D. 200) as established by Minor and Toepel (1981:167-169).

In 1969 and 1971 limited cultural resource surveys were conducted in the Middle Fork of the Willamette drainage in the Western Cascades by students from the Department of Anthropology at the University of Oregon. Utilizing USDA Forest Service personnel and local citizens as informants 20 previously unrecorded sites (10 lithic scatters and 10 rock shelters) were inventoried (Grayson 1975). In conjunction with this inventory program limited salvage excavations were carried out at Baby Rock Shelter (35LA53) which had been badly damaged by looters.

Intermittant occupation of Baby Rock Shelter extended from sometime prior to 7000 B.P. into the historic period (Olsen 1975).

Beginning in the mid-1970's Federal land managing agencies began to actively inventory archaeological sites in the Western Cascades. However, since this inventory activity ordinarily involved no excavation the information generated was limited to data on site size, location, environmental setting and what could be learned from a (usually) small surface collection. Winkler (1983) has utilized data of this type from sites in the Middle Fork Willamette drainage to examine prehistoric land use patterns in the area.

In the decade of the 1980's the Willamette National Forest has funded a number of test excavations and one major excavation of archaeological sites in the Middle Fork Willamette drainage. Rigdon's Horse Pasture Cave (35LA39), excavated during the summer of 1981 by the University of Oregon Archaeological Field School with funds provided by the Willamette National Forest, is the most extensive excavation in the drainage to date.

Intermittant occupation of this task specific site began prior to 2450 radiocarbon years B.P. and ended around 130 radiocarbon years B.P. (Baxter, et al 1983:37). Four stratigraphically defined clusters of projectile points identified by the research should prove valuable in determining the temporal and cultural affiliation of other sites in the drainage.

Only one site, Joe's Peak II (35LA626), in the Winberry Creek drainage has been excavated to date. Based on a small sample of artifacts obtained from a very limited excavation (8.5m^2) Winkler (1986:18-20) concludes that Joe's Peak II was a task specific temporary camp used for hunting and associated activities. The small number of tools recovered and the absence of temporally sensitive tool forms precluded an age determination for the site.

A summary of the ethnography of the southern Willamette Valley and the adjacent uplands may be found in the Cultural Resource Overview for the Bureau of Land Management's Eugene District (Beckham, Minor and Toepel 1981:41-114). Sites in the lower Middle Fork Willamette drainage including the lower reaches of Fall Creek and Winberry Creek were on the boundary between the territory of the Winefelly band of the Kalapuya and the territory of the Southern Molala at the time of Euro-American contact (Beckham 1976). However, given the reputedly generally cordial nature of the contact between the Kalapuya and the Southern Molala it is probable that the territorial boundary between the two groups was flexible and the area might have been occupied by members of either group (Toepel and Beckham 1981:80, 85-86).

FIELD PROCEDURES

Initially, duff and litter were removed from six areas (see Figure 2.2) along the ridge. The six "sub-litter collection areas" ranged from 3m^2 to 25m^2 and exposed a total of 73m^2 of "O" horizon soil. To facilitate horizontal control the location of the sub-litter collection areas was referenced to the "P" line stations of the proposed road. Material from the sub-litter collection areas was collected at the time they were opened (5/19/86), and on 6/17/86 and 8/11/86 as weathering exposed additional material. Provenience for the sub-litter material was by individual collection unit.

In order to ascertain the depth and nature of the cultural deposit, to obtain a larger sample of artifacts and to better determine the horizontal boundaries of the site, eight 1x2 meter test pits and 10 50x50 centimeter shovel test units were excavated and the excavated material passed through a 1/4 inch mesh screen. Test pits 2-6 and 8 were excavated to a depth of 10 cm below surface in a single level. Test Pit #1 was excavated to a depth of 20 cm below surface in two 10 cm levels and Test Pit #7 was excavated to a depth of 5 cm below surface in a single level. Each of the 10 shovel test units was excavated to a depth of 10 cm below surface in a single level. A total of 1.95m^3 of fill was excavated. The amount of cultural deposit excavated was considerably less than this because the cultural deposit was not present in all excavations and nowhere did it extend more than 8 cm below the surface of the "O" horizon except in the fill of krotovina. The average thickness of the cultural deposit and the "O" horizon was on the order of 5 cm.

The final phase of field work was the making of a topographic map which also showed the location of sub-litter collection units and test pits, the horizontal boundaries of the site and the proposed timber sale road location and adjacent unit boundary (see Figure 2.2).

STRATIGRAPHY

Stratum 1. Stratum 1 is 5 to 8 cm thick. This stratum is a very dark gray (10YR3/1) friable silt loam with a very high organic content. Partially decayed twigs, fir needles and fir cones are present in this "O" horizon soil. Also present are numerous small fragments of charcoal, residue of one or more wildfires which have burned through the stand in the past. Angular fragments of welded tuff and tuff breccia ranging in size from less than 1 cm to more than 5 cm along the axis of maximum dimension are abundant in stratum 1.

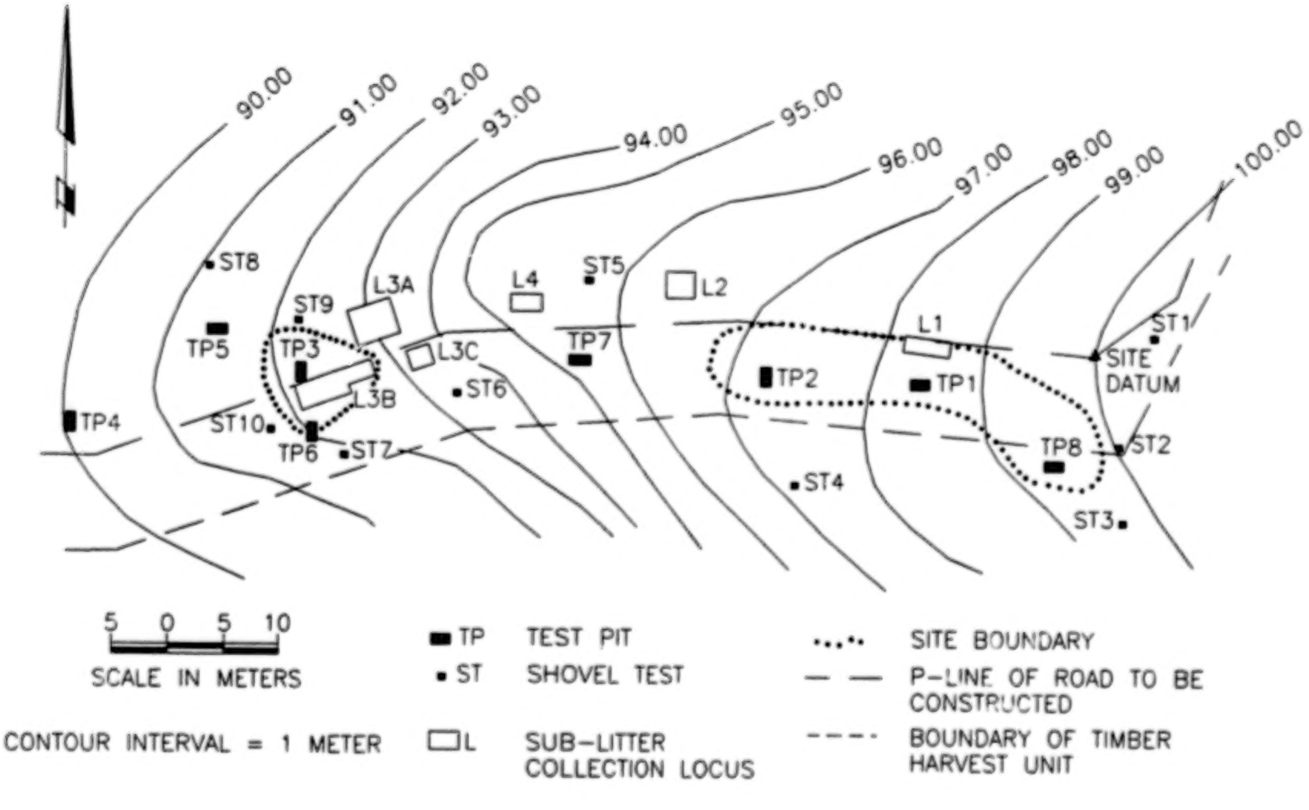

Figure 2.2 Site map of the Cornucopia Site ((35LA751).

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Stratum 2. Stratum 2 is a light reddish brown (5YR6/4) to reddish brown (5YR5/4), compact, silty clay mineral soil corresponding to the "A" horizon. The contact surface between strata 1 and 2 is uneven and numerous krotovina filled with stratum 1 are discernable at the contact surface. No charcoal was noted in undisturbed, i.e., outside of krotovina, stratum 2. Angular fragments of welded tuff and tuff breccia in sizes similar to and larger than those found in stratum 1 are abundant. The thickness of stratum 2 was not determined (see Figure 2.3 for stratigraphic profile).

The vertical distribution of cultural material at the Cornucopia site is limited to the "O" horizon except where present in krotovina filled with "O" horizon material which penetrate the "A" horizon. This was evident by the immediate reduction in the amount of cultural material recovered from each test pit when excavations in the unit extended below the base of the "O" horizon.

Evidence for Wildfire

Three lines of evidence support the contention that wildfire has burned through the area surrounding the Cornucopia site. Fire scars at the base of the old-growth and older second growth Douglas-firs as well as the multi-component nature of the stand are evidence supporting at least two fire events within the period encompassed by the age of the oldest stand component.

Abundant small fragments of charcoal in stratum 1 (the "O" horizon soil) of all test pits and shovel test units indicate widespread fire. The charcoal fragments were found in test pits and shovel test units where little or no lithic debitage was found which suggests that while some of the charcoal may be the residue of campfires this cannot account for all of the charcoal present in the "O" horizon.

Finally, many pieces of cryptocrystalline silicate material exhibit extensive thermal spalling, crazing, morphological form and/or color changes generally attributed to prolonged exposure to high temperatures.

DESCRIPTION OF CULTURAL MATERIALS

Eleven tools and 122 pieces of debitage were recovered from test pits, shovel tests and sub-litter collection loci at the Cornucopia site. In addition, 529 pieces of thermally produced cryptocrystalline angular waste were recovered. Four lithic raw materials are represented in the site collection; cryptocrystalline silicate, obsidian, basalt and welded tuff.

Eight (72.7%) of the tools and 95 pieces (77.8%) of the debitage are cryptocrystalline silicate material while three tools (27.3%) and 23 pieces (18.8%) of the debitage are obsidian. Basalt and welded tuff are represented by one piece and three pieces of debitage respectively and together comprise just over three percent of the debitage. Distributional data for tools and debitage recovered from the Cornucopia site are presented in Tables 2.1 thru 2.5. Cryptocrystalline silicate and obsidian debitage size data are presented in Tables 2.6 and 2.7.

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	PROVENIENCE					
Tool Type	**Test Pit 1**	**Test Pit 2**	**Test Pit 3**	**Test Pit 6**	**Sub-litter**	**Total**
Projectile Points		**2***	**1**	**1**		**4**
Bifacially Worked Fragments		**2**			**1**	**3**
Unifacially Worked Fragments				**1**	**1***	**2**
Culturally Modified Flakes	**1**					**1**
Cores					**1**	**1**
Total	**1**	**4**	**1**	**2**	**3**	**11**

***Obsidian Tool**

Table 2.1. Distribution of tools recovered from the Cornucopia Site (35LA751).

	PROVENIENCE												
	TP1, Level 1			TP1, Level 2 Knotovina Complex		TP1, Level 1		TP2, Level 1		TP3, Level 1		TP4, Level 1	
Raw Material	CCS	Obsid	Weld Tuff	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid
Debitage Type Primary Cortex Flakes			1										
Secondary Cortex Flakes			1										
Interior Flakes	3									7	1		
Broken Interior Flakes	10	3								8	1		
Interior Flake Fragments	4	5			1	1			1	6	1	1	1
Angular Waste									2				
Thermally Produced Angular Waste	30			2		3		7		169		5	
TOTAL	17*	8	2	*	1	1*		*	3	21*	3	1*	1

*Does not include thermally produced angular waste.

Table 2.2. Debitage from test pit site excavations at the Cornucopia Site (35LA751).

	PROVENIENCE												
	TP5, Level 1		TP6, Level 1		TP7, Level 1		TP8, Level 1			TOTAL			
Raw Material	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid	bas.	CCS	Obsid	bas.	Weld tuff
Debitage Type Primary Cortex Flakes									1			1	1
Secondary Cortex Flakes													1
Interior Flakes			2							12	1		
Broken Interior Flakes			8		1			1		27	5		
Interior Flake Fragments	2		11				2	1		27	10		
Angular Waste			2		1					3	2		
Thermally Produced Angular Waste	4		112		2		27			361			
TOTAL	2*		23*		2*		2*	2	1	69*	18	1	2

Table 2.2 (cont'd)

	PROVENIENCE*									
	Locus 1 $7.5m^2$		Locus 2 $9.0m^2$		Locus 3A $25.0m^2$		Locus 3B $24.0m^2$		TOTAL	
RAW MATERS	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid
Debitage Type Primary Cortex Flakes										
Secondary Cortex Flakes	1								1	
Interior Flakes	1						10		11	
Broken Interior Flakes		1					5	2	5	3
Interior Flake Fragments		1		1			7		7	2
Angular Waste										
Thermally Produced Angular Waste	3		1		2		158		164	
TOTAL	2**	2	**	1	**		22**	2	24**	5

*No material was recovered from Locus 3C ($3.0m^2$) or Locus 4 ($4.5m^2$).

**Does not include thermally produced angular waste.

Table 2.3. Debitage from sub-litter collection loci at the Cornucopia Site (35LA751).

	PROVENIENCE*							
	ST1	ST2		ST3	ST4	ST5	TOTAL	
RAW MATERIAL	CCS	CCS	Weld. Tuff	CCS	CCS	CCS	CCS	Weld. Tuff
Debitage Type								
Primary Cortex Flakes			1					1
Secondary Cortex Flakes								
Interior Flakes								
Broken Interior Flakes				1			1	
Interior Flake Fragments						1	1	
Angular Waste								
Thermally Produced Angular Waste	2	1			1		4	
TOTAL	**	**	1	1	**	1	2**	1

*Shovel test units 6--10 did not yield any materia.
**Does not include thermally produced angular waste.

Table 2.4. Debitage from shovel test units at the Cornucopia Site (35LA751).

	MATERIAL TYPE				
Debitage Type	CCS	Obsid	Basalt	Welded Tuff	TOTAL
Primary Cortex Flakes			1	2	3
Secondary Cortex Flakes	1			1	2
Interior Flakes	23	1			24
Broken Interior Flakes	33	8			41
Interior Flake Fragments	35	12			47
Angular Waste	3	2			5
Thermally Produced Angular Waste	529				529
TOTAL	95*	23	1	3	122*

*Does not inlcude thermally produced angular waste.

Table 2.5. Total debitage recovered from the Cornucopia Site (OR-09-137).

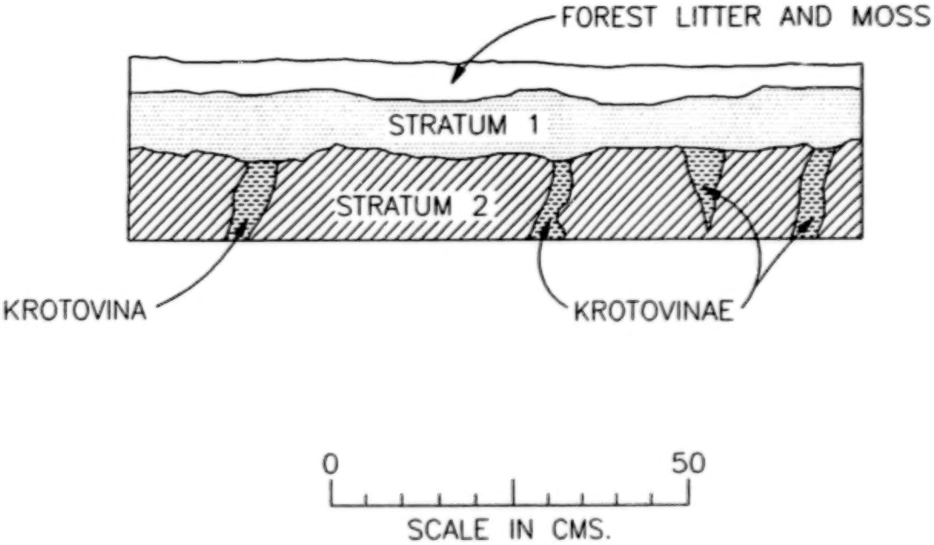

Figure 2.3 Stratigraphic profile at the west end of Test Pit #1.

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Projectile Points

Four nearly complete projectile points were recovered from the Cornucopia site. All specimens are small stem-and-barb forms common to Late Archaic assemblages in the Willamette Valley and the Middle Fork Willamette drainage.

Two specimens were recovered from Test Pit 2. One specimen is a small, triangular, corner or basal notched point with a straight to slightly contracting stem, pointed barbs, and straight lateral margins (Figure 2.4,a). The item has a thin plano-convex cross section and longitudinal section. The specimen is 25+ mm in length (a small portion of the distal end is missing), 12+ mm wide (a portion of one barb appears to be missing or the barb configuratation is intentionally asymetrical) and 3 mm thick. The neck width is 3 mm. The material is obsidian. This specimen is similar to White's Type 8 points (1975:126-127) from the upper Willamette Valley and Type 4 points from Rigdon's Horse Pasture Cave (Baxter, et al 1983:30 and Figure 10).

The second specimen from Test Pit 2 is also a small, triangular point but is corner notched with an expanding stem, pointed barbs and concave lateral margins (Figure 4,b). The item has a thin lenticular cross section and longitudinal section. The specimen is 20+ mm in length (a small portion of the distal end is missing), 16 mm wide and 3 mm thick. The neck width is 4.5 mm. The material is obsidian. This point resembles the smaller forms of White's Type 7a points (1975:126) and Type 4 points from Rigdon's Horse Pasture Cave (Baxter, et al 1983:30 and Figure 10).

The third specimen was recovered from Test Pit 3. This is a small, triangular point with corner or basal notching, pointed barbs and straight lateral margins (Figure 2.4,c). This point has a plano-convex cross section and a concave-convex longitudinal section. The specimen is 23+ mm in length, 16+ mm wide and 3 mm thick. Neck width is 5 mm. The material is cryptocrystalline silicate. The specimen resembles White's Type 10 points (1975:127-128) and Type 8 points from Rigdon's Horse Pasture Cave (Baxter, et al 1983:30 and Figure 10).

A portion of the stem, one barb, the distal tip and a portion of one lateral margin are missing from this point. There is a flake scar which begins at the broken distal tip of the point and extends proximally along one face nearly to the juncture of the blade and the basal elements. This flake scar appears to be the result of an impact on the distal end of the point with the force directed parallel (or nearly so) to the long axis of the point. The resulting flake removed the tip and a thin flake of material along one lateral margin of one face of the point. It seems possible that this damage was the result of use. The discharged projectile struck a hard object, either a rock or a bone in the body of a prey animal, with sufficient force to remove the flake.

The fourth specimen was recovered from Test Pit 6. This is a small, corner notched, triangular point with an expanding stem (Figure 2.4,d). Both shoulders are damaged and it was not possible to determine the form of the barbs, if any were present. One lateral margin is concave, the other is convex. The item has a plano-convex cross section and longitudinal section. The specimen is 21 mm in length, 11+ mm wide and 4 mm thick. Neck width is 5 mm. The material is cryptocrystalline silicate and exhibits color changes associated with exposure to high temperatures. The point most closely resembles the smaller forms of White's Type 7a points (1975:126), the smaller varieties of Type 7a points from the Flanagan site (Toepel and Minor 1980:26 and Figure 17) and Type 4 points from Rigdon's Horse Pasture Cave (Baxter, et al 1983:30 and Figure 10).

Bifacially Worked Fragments

The three bifacially worked fragments recovered from the Cornucopia site all appear to be portions of finished tools broken through use or during the final stage of manufacture. Two fragments recovered from Test Pit 2 appear to be pieces of the same item. The largest fragment, a terminal portion, measures 31 mm x 27 mm. The smaller fragment is a portion of a lateral margin approximately 10 mm x 10 mm in size. These fragments may be part of a large knife. The material is cryptocrystalline silicate.

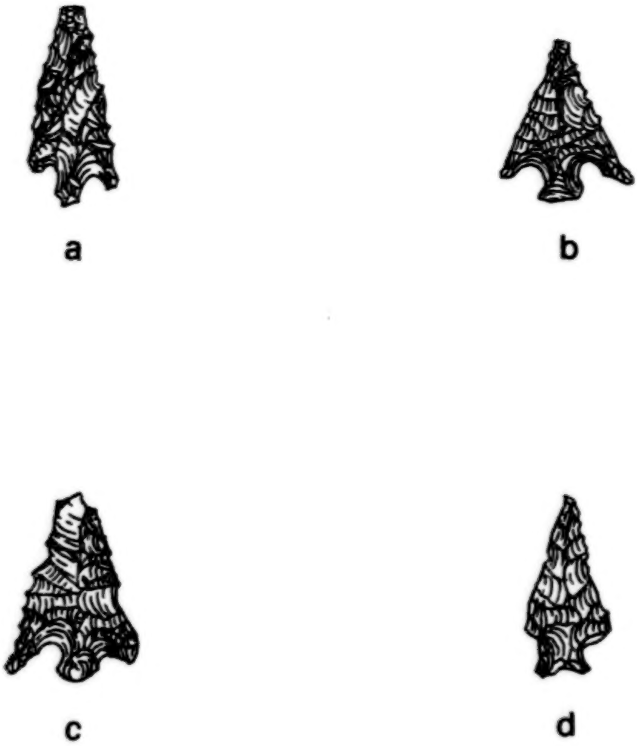

Figure 2.4 Projectile points from the Cornucopia Site (35LA751). Shown actual size.

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The third bifacially worked fragment was recovered from sub-litter collection locus 3B. This piece is the distal 2/3 of a triangular preform with a convex proximal terminus. This item is 19+ mm in length, 19 mm wide and 6 mm thick. This preform style would be suitable for the manufacture of any of the projectile point forms recovered from the site.

Unifacially Worked Fragments

Two fragments featuring the steep retouch characteristic of scrapers constitute the items in this class. They are presumed to be fragments of what were once complete scrapers. One specimen is made from obsidian, the other from cryptocrystalline silicate.

Culturally Modified Flakes

This object class subsumes such earlier classes as used flakes, worked flakes, edge altered flakes, etc. A single culturally modified flake was recovered from the Cornucopia site. The material is cryptocrystalline silicate.

Cores

A single core was recovered from the Cornucopia site. The specimen is a tabular piece of cryptocrystalline silicate with several flake scars originating from platforms located at opposite ends of the piece. The flake scars are present on one face only. The dimensions of the item are 41 mm x 33 mm x 23 mm.

Lithic Debitage

Six classes of debitage are recognized in this study; primary cortex flakes, secondary cortex flakes, complete interior flakes, broken interior flakes, interior flake fragments and angular waste. Primary cortex flakes have cortex on 90-100% of the dorsal surface while cortex covers less than 90% of the dorsal surface of secondary cortex flakes. Interior flakes have no cortex on them. Complete interior flakes are just that -- whole. Broken interior flakes have an intact platform and bulb of force but are not whole, while interior flake fragments are distal fragments lacking the platform and some or all of the bulb of force. Angular waste consists of pieces with four or more facets lacking the attributes of flakes.

As noted previously, the majority (77.8%) of the debitage is cryptocrystalline silicate material. Only one decortation flake (secondary) was recovered. This is interpreted as evidence that the initial reduction of material occurred elsewhere. The nearest known source of cryptocrystalline silicate material is approximately two kilometers distant in the NE 1/4, Sec. 3, T. 19 S., R. 1 E., W.M. Flake sizes (whole, broken and fragments) range from 1 cm to 11 cm along the axis of maximum dimension (see Table 2.6). However, 86.3% of the items are larger than 1 cm and no more than 3 cm along the axis of maximum dimension.

	Debitage Size in cms along axis of maximum dimension							
DEBITAGE TYPE	1	2	3	4	5	6	11	TOTAL
Prim. Cort. Flk.								
Sec. Cort. Flk.				1				1
Int. Complete	1	8	9	2	1	1	1	23
Int. Broken		12	21		1			34
Int. Frag.		19	13	1	1			34
Ang. Debris				1		1	1	3
TOTAL	1	39	43	5	3	2	2	95

Table 2.6. Size data for cryptocrystalline silicate debitage from the Cornucopia Site (35LA751).

Obsidian items constitute an additional 18.8% of the debitage. No decortation flakes were noted in this raw material class. Flake size is much more restricted than was the case for cryptocrystalline silicate material. All obsidian debitage recovered ranged between 1 cm and 3 cm with the modal size being larger than 1 cm but no more than 3 cm (see Table 2.7).

	Debitage Size in cms along axis of maximum dimension							
DEBITAGE TYPE	1	2	3	4	5	6		TOTAL
Prim. Cort. Flk.								
Sec. Cort. Flk.								
Int. Complete			1					1
Int. Broken		6	2					8
Int. Frag.	1	8	3					12
Ang. Debris		1	1					2
TOTAL	1	15	7					23

Table 2.7. Size data for obsidian debitage from the Cornucopia Site (35LA751).

Basalt and welded tuff constitute an insignificant 3.4% of the debitage.

One additional class of items recognized in this study is thermally produced angular waste. This item class contains 529 pieces - far and away the most numerous category of items recovered. All thermally produced angular waste is cryptocrystalline silicate material.

Thermally produced angular waste from the Cornucopia site includes several morphological forms. They are flakes with apparent bulbs of force located near the center of ventral surfaces and "hinged" terminations on all margins (pot lids), and large pieces with three or more broadly concave and/or convex faces -- some exhibiting points of detachment near the center of the broadly curved faces -- and an absence of bulbs of force. The color of these items ranges from mottled grayish white or pinkish-gray through gray to very dark gray. Some items also exhibit extensive crazing.

Winkler (1986:19-20) notes that cryptocrystalline silicates "...in the form of angular waste, with indications of heat treatment..." consititute the majority of lithic material recovered from Joe's Peak II. She also expresses some doubt as to whether the thermally altered state of the CCS is the product of intentional heat treatment or whether it is the result of forest fires following cultural deposition. She cites the relative abundance of this class of material in test units having relatively high concentrations of other cultural material as evidence that the CCS was transported to Joe's Peak II and is not a naturally occurring constituent in the soil profile.

Winkler's observations regarding the thermally altered CCS angular waste from the Joe's Peak II site apply equally well to the thermally produced angular waste recovered from the Cornucopia site. However, I feel that this item class from the Cornucopia site is the result of post-depositional factors (wildfire) acting on CCS transported to the site as raw material for tool manufacture and that it is not the result of intentional heat treatment. The nature of the thermal alteration is so extreme as to render the material unfit for tool manufacture (Fagan 1986, personal communication) and the areal distribution of the material is too widespread to represent one or two failed attempts at heat treating CCS. Individual specimens in other item classes in the lithic assemblage also exhibit evidence of prolonged exposure to high temperatures.

At the Cornucopia site cryptocrystalline silicate material (excluding the thermally produced angular waste) outnumbers obsidian in both the tool and debitage categories by a ratio of approximately 3:1. This contrasts markedly with raw material frequencies obtained for both tools (100% obsidian) and debitage (3:1 obsidian over CCS) from the Joe's Peak II site and other sites located higher up in the Middle Fork Willamette drainage which have been evaluated to date (Winkler 1986:19).

At site 35LA33, a Middle Archaic period site located slightly downstream in the basin from the Cornucopia site, twenty percent of the tools but only 2.2% of the debitage was obsidian (Cole 1967:25).

At Rigdon's Horse Pasture Cave, the relative proportions of CCS and obsidian in the lithic assemblage undergo marked fluctuations through time with the percentage of obsidian varying between approximately 50% and nearly 100% of the assemblage (Connolly 1983, Figure 6 and Table 2). Connolly (1983:16) suggests that such variations through time reflect either the "...purposeful selection of particular raw material types for their functional attributes, or the differential availability of raw material types to different rockshelter occupants..."

Whether such observed differences in raw material frequencies reflect cultural preferences, selection for functional attributes, are related to chronological periods, or reflect short term availability of and accessibility to the various raw material sources are as yet unanswered questions in the scheme of Willamette Basin prehistory.

SITE PARAMETERS

1. Site Boundaries

The Cornucopia site consists of two low density lithic scatters located approximately 40 meters apart on the gently rounded summit slope of a west trending spur ridge. The easternmost scatter covers an estimated 500 m^2 and the westernmost 150 m^2 for a combined area of 650 m^2.

2. Depth of Cultural Deposit

Test excavation results indicate that the cultural deposit is limited to the upper 5-8 cm of the site coinciding with the "O" horizon. The [illegible] exceptions being where krotovina filled with "O" horizon soil which extend below the average depth [illegible] "O" horizon.

3. Cultural Features

No cultural features were noted in the 13.5 m^2 excavated. The shallow nature of the deposit would seem to preclude the potential for cultural features.

4. Site Integrity

The site has not been disturbed by past timber harvest or road construction activities. However, disturbance due to natural forces is almost a certainty given the forested environment. What is not documented is the nature and extent of this disturbance.

Fire has adversely affected the cryptocrystalline silicate portion of the assemblage as indicated by the pot-lidding, crazing and color changes noted elsewhere. Fire may also render the obsidian constituent of the assemblage unsuitable for dating by hydration layer measurement (Fagan 1986, personal communication).

5. Density of Cultural Materials

An average density of 49 items/m^3 was calculated for the total volume of excavated fill. The actual density would be somewhat higher than this, approximately 100 items/m^3 for the cultural deposit ("O" horizon).

FUNCTION AND CHRONOLOGY

The limited areal extent and shallow nature of the cultural deposit, the low artifact concentration and the apparent absence of subsurface features are interpreted as evidence that the Cornucopia site was occupied for brief periods of time by small groups.

The site assemblage consists of 92% debitage indicating that the manufacture and maintenance of stone tools was an important function. The absence of decortation flakes and the generally small size of the debitage is interpreted as evidence that little or no primary reduction occurred at the site. The form of the parent artifacts (quarry blanks, preforms, etc.) from which the finished tools were produced is not known.

The presence of a few slightly damaged projectile points and a single preform may indicate that one task performed at the site was the re-arming of projectile weapons, perhaps including the manufacture of projectile point preforms.

It has been my personal experience that unifaces and culturally modified flakes ordinarily comprise the two most numerous tool classes at small lithic scatters in the uplands surrounding the upper Willamette Valley. The apparent scarcity of these items in the Cornucopia site lithic assemblage is interpreted as evidence that tasks performed with these tools (processing prey animals?) were not important functions at this location.

The four projectile points recovered at the Cornucopia site offer the only means of dating the cultural deposit. As noted previously, all four are similar to types found in the upper levels of a number of southern Willamette Valley sites. All four of the points and the types which they resemble have neck widths less than 8 mm. Assemblages characterized by a predominance of projectile points with neck widths less than 8 mm are the hallmark of the Late Archaic period (A.D. 200 - A.D. 1750) in the Willamette Basin (Minor and Toepel 1981:170).

Three of the four points are similar to Type 4 points which are present in strata A and B and the fourth point is similar to Type 8 points found only in stratum A at Rigdon's Horse Pasture Cave (Baxter, et al 1983, Figure 15). Bracketing dates for the distribution of the Type 4 and Type 8 points at Rigdon's Horse Pasture Cave are A.D. 200 and post A.D. 1800 (Baxter, et al 1983:38).

Taking these facts into consideration, the occupation of the Cornucopia site is assigned to the Late Archaic period with the probability that it would fall into the latter half of this period.

SITE POTENTIAL AND SIGNIFICANCE

The cultural deposit at the Cornucopia site has not been disturbed by "modern" activities and therefore retains basic site integrity. However, it is my professional opinion that the cultural deposit lacks the necessary depth, areal extent and concentration of artifactual material to expect that additional excavation will yield significant new information. I do not consider this site as eligible for listing on the National Register of Historic Places.

I do recommend that the site area be closely monitored during the yarding and decking of right-of-way timber and the earliest stage of road construction and that appropriate mitigative measures be taken if new evidence is found which might refute my original assessment of site significance.

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REFERENCES CITED

Baxter, Paul W., Richard D. Cheatham, Thomas J. Connolly, and Judith A. Willig
1983 Rigdon's Horse pasture Cave: an upland hunting camp in the western Cascades. University of Oregon Anthropological Papers 28.

Beckham, Stephen Dow
1976 Indian distribution in Oregon. In Atlas of Oregon, edited by William G. Loy, pp. 6-7. University of Oregon Books, Eugene, Oregon.

Beckham, Stephen Dow, Rick Minor, and Kathryn Anne Toepel
1981 Prehistory and history of BLM lands in west-central Oregon: a cultural resource overview. University of Oregon Anthropological Papers 25.

Cole, David L.
1967 Archaeology of the Fall Creek Dam Reservoir. Final Report. The Museum of Natural History, University of Oregon.

Connolly, Thomas J.
1983 Lithic debitage and raw materials. In Rigdon's Horse Pasture Cave: an upland hunting camp in the western Cascades, by Paul W. Baxter, Richard D. Cheatham, Thomas J. Connolly and Judith A. Willig. University of Oregon Anthropological Papers 8:13-23.

Franklin, Jerry F. and C. T. Dyrness
1973 Natural vegetation of Oregon and Washington. Pacific Northwest Forest and Range Experiment Station General Technical Report PNW-8.

Grayson, Donald K.
1975 Recent archaeological surveys in the western Cascades: prehistory and conservation archaeology. In Archaeological Studies in the Willamette Valley, Oregon, edited by C. Melvin Aikens. University of Oregon Anthropological Papers 8:495-503.

Minor, Rick and Kathryn Anne Toepel
1981 Archaeological overview. In Prehistory and history of BLM lands in west-central Oregon: a cultural resource overview, by Stephen Dow Beckham, Rick Minor and Kathryn Anne Toepel. University of Oregon Anthropological Papers 25:117-183.

Olsen, Thomas L.
1975 Baby Rock Shelter. In Archaeological Studies in the Willamette Valley, Oregon, edited by C. Melvin Aikens. University of Oregon Anthropological Papers 8:469-494.

Toepel, Kathryn Anne and Stephen Dow Beckham
1981 Ethnographic overview. In Prehistory and history of BLM lands in west-central Oregon: a cultural resource overview, by Stephen Dow Beckham, Rick Minor and Kathryn Anne Toepel. University of Oregon Anthropological Papers 25:41-115.

Toepel, Kathryn Anne and Rick Minor
1980 Archaeological investigations at the Flanagan Site (35LA218): the 1978 season. Report to the State Historic Preservation Office submitted by the Department of Anthropology, University of Oregon.

White, John R.

1975 A proposed typology of Willamette Valley sites. In Archaeological Studies in the Willamette Valley, Oregon, edited by C. Melvin Aikens. University of Oregon Anthropological Papers 8:17-140.

Winkler, Carol J.

1983 A Site Location Analysis for the Middle Fork of the Willamette Watershed. Unpublished master's paper on file at the University of Oregon, Eugene.

1986 The Joe's Peak II Site (35LA626) -- Determination of Eligibility. Lowell Ranger District, Willamette National Forest.

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An Archaeological Evaluation of the Mill King Site (35LA805) Lane County, Oregon

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Eugene District

December, 1987

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ABSTRACT

Limited test excavations at the Mill King site (35LA805) located in the Mill Creek drainage of the Mohawk River watershed have shown that the site is a shallow, low density lithic scatter consisting of a single component. Limited manufacture and maintenance of chipped stone tools are the only tasks for which there is evidence.

The sole temporally sensitive artifact (and the only tool recovered) is a small projectile point similar to broadly defined types assigned to the Late Archaic period in the Upper Willamette Valley and the Upper Middle Fork (Willamette) drainage.

The cultural deposit is judged to lack the necessary concentration of artifactual material to expect that additional excavation will provide information significant to furthering the understanding of local or regional prehistory. The Mill King site is determined to be ineligible for listing on the National Register of Historic Places.

INTRODUCTION

The Mill King site (35LA805) is located in the McKenzie Resource Area of the Eugene District, Bureau of Land Management. That portion of the site located on BLM administered property covers an area of approximately 2500 m2. The extent of the site area located on privately owned property is unknown. The cultural deposit located on BLM administered property is characterized as a low density lithic scatter confined predominantly to the "O" soil horizon. The BLM portion of the site has not been disturbed by logging; however, fire has adversely affected the cryptocrystalline silicate constituent of the lithic assemblage. There are several lines of evidence to support the contention that one or more fires of less than stand replacement severity have burned through the tract containing the Mill King site.

The purpose of the project reported here was to document the nature of the Mill King site, the extent to which its integrity has been disturbed, and to evaluate the site's archaeological significance in terms of its eligibility for inclusion on the National Register of Historic Places.

LOCATION AND NATURAL SETTING

The Mill King site is situated on a south-facing dissected bench overlooking the valley of Mill Creek approximately 1.3 kilometers upstream from the confluence of Mill Creek and the Mohawk River (see Figure 3.1). Located approximately four kilometers northeast of the town of Marcola (NW¼SW½, Sec. 9, T. 16 S., R. 1 W., Willamette Meridian), the site is situated at an elevation of 770 feet a.s.l. (280 meters) some 50 meters above the Mill Creek Valley floor.

The site is within the coniferous forest community of the Western Oregon Interior Valley Vegetation Zone (Franklin and Dyeness 1973). The uneven aged stand occupying the site clearly reflects the role fire has played in the formation of that stand. Douglas-fir, western hemlock and western redcedar constitute the coniferous component of the overstory while scattered large specimens of bigleaf maple and golden chinkapin constitute the deciduous component. Understory vegetation is dominated by vine maple, dogwood, hazel, young western hemlock, redcedar and grand fir.

ARCHAEOLOGICAL AND ETHNOGRAPHIC BACKGROUND

A number of medium to low density lithic scatters in and around the Mohawk Valley, including eight sites in the Mill Creek drainage, have been discovered and recorded during the past 20 years. Two sites in the Mohawk River drainage have been excavated and the results of the excavations formally reported.

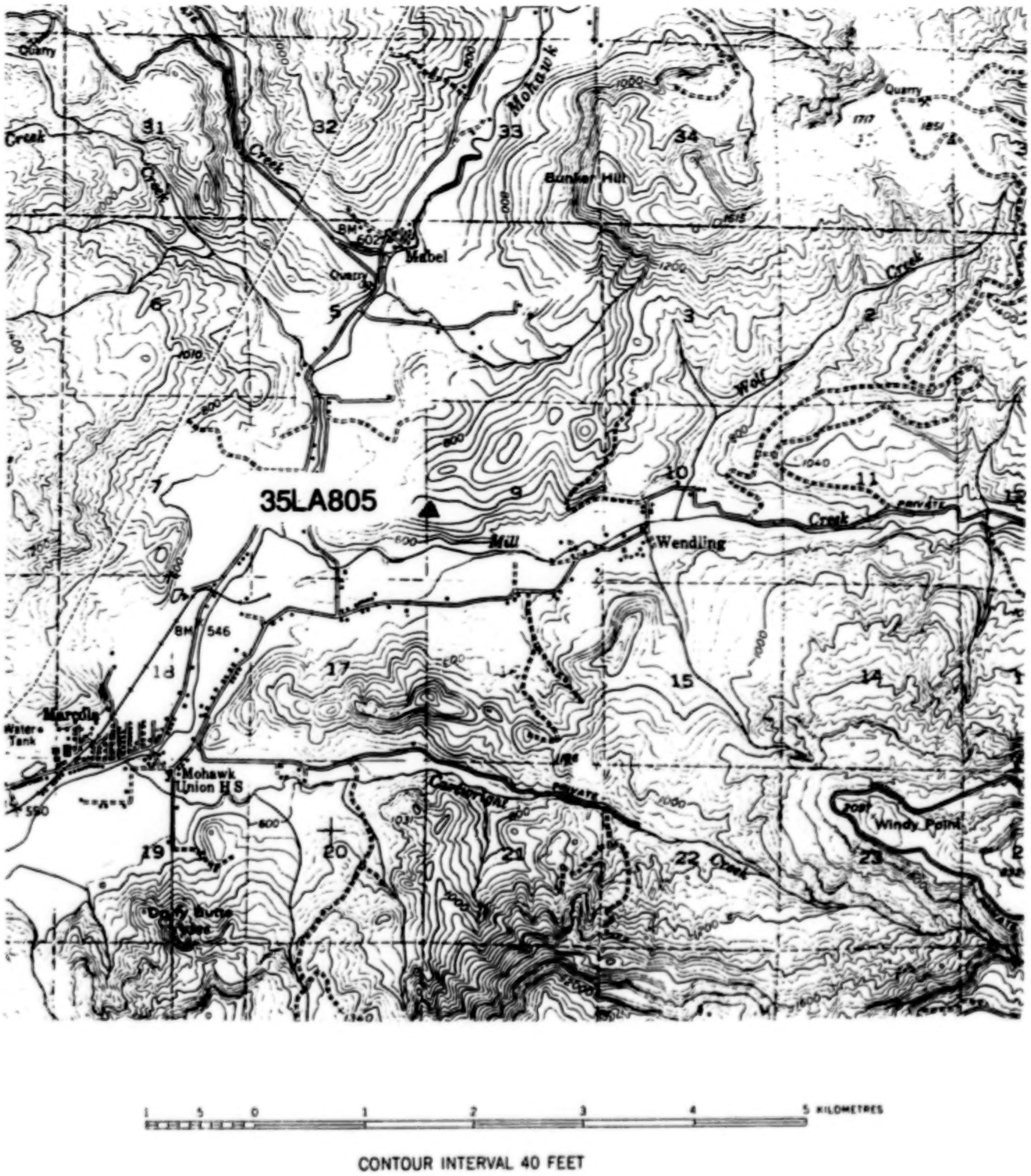

Figure 3.1. Location of the Mill King Site (35LA805).

The Halverson site (35LA261), located approximately seven kilometers southwest of the Mill Creek site, was excavated by the University of Oregon archaeological field school crew during the summer of 1977. The site proved to be a task specific location occupied during the Late Archaic and early historic periods. A single date of 160± 130 radiocarbon years B.P. was obtained from the site (Minor and Toepel 1980).

The Mill Creek No. 6 site (35LA365), located approximately 700 meters east of the Mill King site on the same slope, was excavated by BLM personnel during the fall of 1985. The site proved to be a task specific location where a full range of biface reduction manufacturing processes was carried out. Maintenance of stone tools associated with hunting and the initial processing of game also occurred at the site (Southard 1986a). Based on the projectile point suite recovered at the site Mill Creek No. 6 is assigned to the transition between the Early and Middle Archaic periods dated to approximately 4000 B.C.

The Beebe site (35LA216), located approximately 16 kilometers southwest of the Mill King site, was excavated by members of the University of Oregon field school in the summer of 1972. Although the Beebe site is located in the Coburg Hills adjacent to the Willamette Valley, the setting is not unlike that of the Mill King site. Folansbee (1975) concluded that the Beebe site served as a seasonally occupied locus for small groups engaged in hunting and associated support activities. Cluster analysis studies of projectile points grouped the Beebe site assemblage with recent components from nearby sites on the floor of the Willamette Valley (Henn, Mack and Sanford 1975). These assemblages are assigned to the Late Archaic Hurd and Fuller phases under the cultural sequence developed by Minor and Toepel (1981:164, Table 14).

Connolley (1983) utilized locational and site size data from recorded sites in the Mohawk Valley, including sites from the Mill Creek drainage, as part of a comparative study of aboriginal settlement patterns within three of the sub-basins in the southern Willamette Basin.

Sites in the Mohawk Valley and those within the lower-mid McKenzie River drainage were within the range of the Mohawk band of the Kalapuya at the time of Euro-American contact (Beckham 1976; Toepel and Beckham 1981:57-58). A summary of the archaeology and ethnography of the southern Willamette Valley and the adjacent uplands may be found in the Cultural Resource Overview of the Bureau of Land Management's Eugene District (Beckham, Minor and Toepel 1981:49-81, 117-176).

FIELD PROCEDURES

During the presale inventory of this timber sale unit 12 to 13 square meters of sub-duff soil was exposed in 12 duff removal scrapes within the site confines. When this activity turned up debitage plans were made to conduct sub-surface testing.

Twenty-three shovel test units measuring 50 by 50 cm were excavated to ascertain the horizontal limits of the cultural deposit and to gain some idea of the density of cultural material. With the exception of Shovel Test 7 excavation of the shovel test units was halted at a depth of 5 cm below the surface of the "Oi" soil horizon. This depth corresponded to the top of the "A" horizon and also marked the point at which the soil was so dry and hard as to be nearly impossible to process through a one-quarter inch mesh screen. Shovel Test 7 was excavated to a depth of 10 cm below the surface of the "Oi" horizon in two 5 cm levels. All excavated material was processed through a one-quarter inch mesh screen and, with the exception of the material from level 2 of Shovel Test 7, excavated material was also processed through a one-eighth inch mesh screen.

Following the excavation of the shovel test units a topographic map of the site was made which also located the shovel test units and the site boundary (Figure 3.2).

STRATIGRAPHY

The shallow excavations conducted at the Mill King site did not reveal much about the natural stratigraphy of the location. One fact which was ascertained is that the initial 5 cm excavation level incorporated the entire "O" horizon and all or most of the mixed "O" and " A" horizon transition zone. Bedrock was encountered at the base of level 1 in Shovel Test 22.

Stratum 1. Stratum 1 is approximately 3 cm thick. This stratum is a dark gray (10YR4/1, dry), friable, silt loam with a very high organic content. Partially decayed conifer cones, needles and twigs as well as occasional shell fragments of beaked hazel are present in this "O" horizon soil. Fragments of charcoal were present in all shovel test units as were small fragments of the welded tuff "A" horizon parent material.

Stratum 2. Stratum 2 is a weak red (lOR5/4, dry) to reddish brown (2.5YR5/4, dry), compact, silty clay "A" horizon mineral soil. The contact between strata 1 and 2 is uneven with a thin (2 to 3 cm) zone of mixed soil between the strata. Numerous krotovina were discernable at the contact surface in all shovel test units except Shovel Test 22 which encountered bedrock at the base of level 1 and Shovel Test 5 which contained many large fragments (up to 10 cm along axis of maximum dimension) of welded tuff. The thickness of stratum 2 was not determined (see Figure 3.3 for stratigraphic profile).

Cultural Stratigraphy

Inability to excavate and process a representative sample of Stratum 2 precludes an accurate determination of the vertical distribution of cultural material at the Mill King site. However, recent test excavations conducted at upland sites have produced data indicating that in the absence of alluvial or colluvial actions which act to bury cultural deposits only the formation of "O" horizon soils and krotovination act to bury these deposits (Southard 1986a, b, 1987). In forested settings subject to periodic fires duff and "O" horizon soils may be partially or wholly consumed and, barring the actions noted above, cultural deposits will tend to remain close to the surface of the soil profile. The exceptions to this will be those pieces which penetrate the soil profile to a greater depth due to krotovination. Because the Mill King site is so located as to negate the effects of alluvial and colluvial actions and was subject to periodic forest fires it is reasonable to assume that most of the cultural material, scanty as it is, is present in Stratum 1 (the "O" horizon) and the immediately underlying transition zone.

Evidence of Wildfire

Three lines of evidence support the contention that wildfire has burned through the forest surrounding the Mill King site. Dominant trees in the stand, very large and decadent Douglas-fir and western redcedar, bear multiple basal fire scars indicating several fire events within the period encompassed by this oldest component. The multi-component nature of the stand and the absence of old growth hemlock and grand fir, fire intolerant species, also serves as evidence of past fires.

Fragments of carbonized wood present in Stratum 1 and the underlying transition zone of all shovel test units indicate widespread evidence of fire. It is unlikely that evidence this widespread could be attributed to campfires or similar "localized" cultural phenomena.

The third line of evidence involves cryptocrystalline silicate material recovered from the site. Over one-half of the cryptocrystalline silicate items recovered (39 of 74 items) exhibited thermal spalling, crazing, morphological form and/or color changes indicative of prolonged exposure to high temperatures.

DESCRIPTION OF CULTURAL MATERIALS

One tool and 42 pieces of debitage were recovered from shovel test units and the sub-duff surface of duff removal scrapes. In addition 39 pieces of cryptocrystalline silicate thermal disaggregation product were

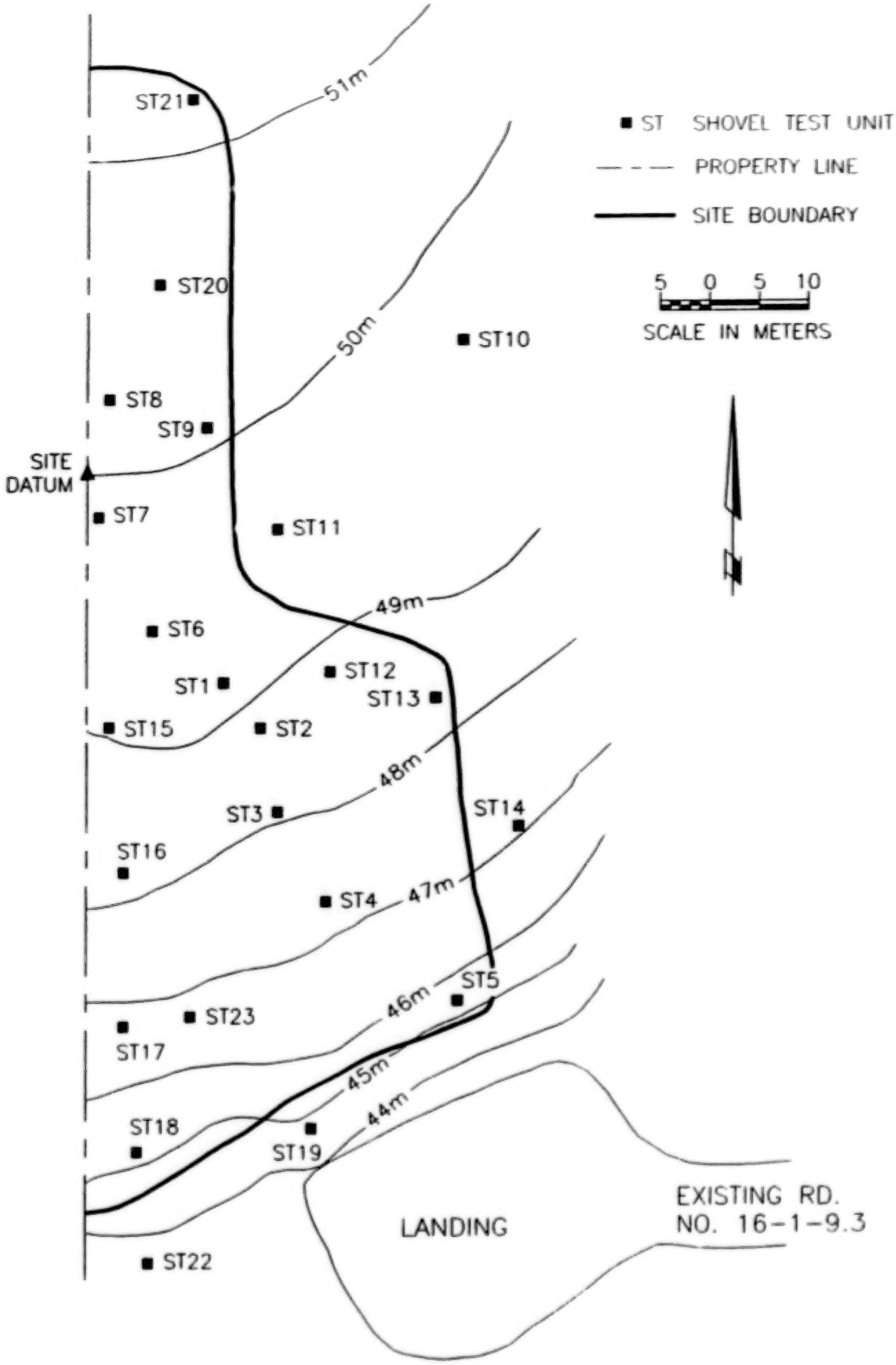

Figure 3.2. Site of map of the Mill King archaeological site.

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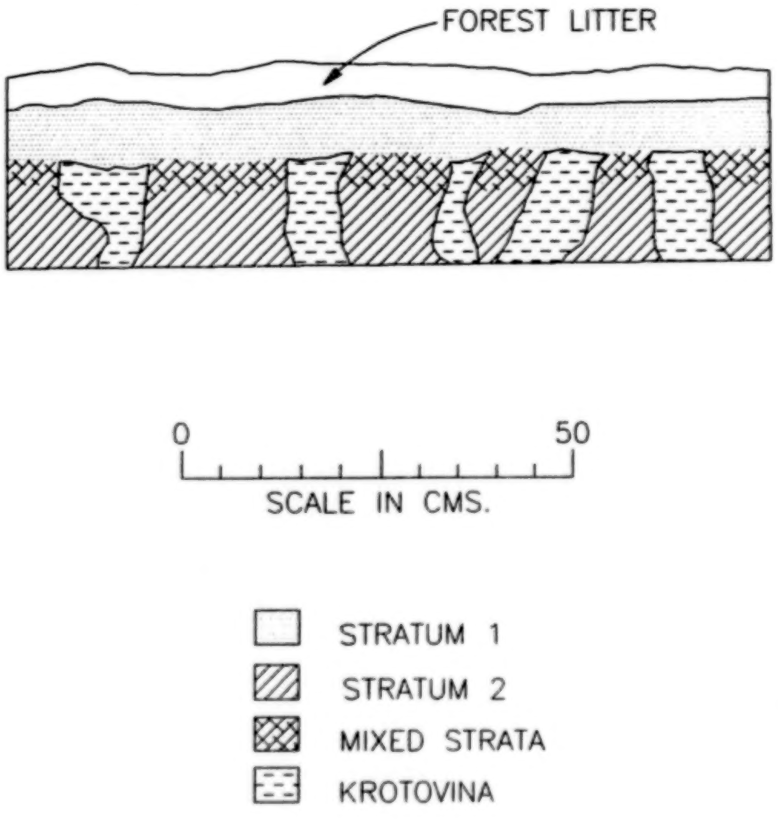

Figure 3.3. Stratigraphic profile, west wall of Shovel Test 7.

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recovered. Four lithic raw materials are represented in the site collection; cryptocrystalline silicate, obsidian, basalt and welded tuff.

Thirty-five pieces (83.3 percent) of the recovered debitage are cryptocrystalline silicate material. The single tool (projectile point) and five pieces (11.9 percent) of debitage are obsidian. The remainder of the debitage consists of a single welded tuff secondary decortation flake and a single secondary decortation flake from a water-worn basalt cobble. Distributional data for debitage recovered from the Mill King site are presented in Table 3.1. Cryptocrystalline silicate and obsidian debitage size data are presented in Tables 3.2 and 3.3.

Projectile Point

The single tool recovered from the Mill King site is a projectile point recovered from Shovel Test 7, level 1. This specimen is a small, triangular, corner notched point with an expanding stem, a straight base and pointed barbs (Figure 3.4). one lateral margin is straight and one is concave. The item has a thin biconvex or lenticular cross section and longitudinal section. The distal tip and one barb are missing and the concave lateral margin appears to have been reworked. The specimen is 26+ mm in length, 17+ mm in width and 4 mm thick. The neck width is 8 mm. The material is obsidian.

This specimen is similar to some specimens included in Baxter's Type 5 points from the Upper Middle Fork Willamette River basin (Baxter 1986, Figure 12), White's Type 7a points (White 1975:188 and Figure 7) and Henn, Mack and Sanford's Type 21 points (Henn, Mack and Sanford 1975:528 and Figure 1) from Upper Willamette Valley sites. These point types are from assemblages assigned to the Late Archaic period.

Lithic Debitage

Six classes of debitage are recognized for the purposes of this study; primary cortex flakes, secondary cortex flakes, complete interior flakes, broken interior flakes, interior flake fragments and angular waste. Primary cortex flakes have cortex on 90-100% of the dorsal surface while cortex covers less than 90% of the dorsal surface of secondary cortex flakes. Interior flakes have no cortex on them. Complete interior flakes are just that -- whole. Broken interior flakes have an intact platform and bulb of force but are not whole, while interior flake fragments are distal fragments lacking the platform and some or all of the bulb of force. Angular waste consists of pieces with four or more facets lacking the attributes of flakes. As noted previously, the majority (83.3%) of this small collection of debitage is cryptocrystalline silicate material. No decoration flakes were recovered at the Mill King site although cobbles of cryptocrystalline silicate material are present in Mill Creek approximately 400 meters to the south.

The percentage of cryptocrystalline silicate debitage is nearly identical to the percent value (83.6%) recorded for the much larger collection from Mill Creek No. 6 located some 700 meters to the east (Southard 1986:18). Cryptocrystalline silicates constituted 75% of the total assemblage from the Halverson site which is also located in the Mohawk River drainage (Minor and Toepel 1980:8).

Cryptocrystalline silicate flake sizes (whole, broken and fragmentary) at the Mill King site range from 1 cm to 5 cm along the axis of maximum dimension (see Table 3.2). Forty percent of the items are less that I cm in size, thirty-one percent of the items are between 1 cm and 2 cm in size and twenty-nine percent of the items are between 2 cm and 5 cm in size.

Obsidian items constitute 11.9% of the debitage collection. Flake sizes range from less than 0.5 cm to a maximum of between 3 cm and 4 cm (see Table 3.3).

Single secondary decortation flakes of basalt and welded tuff comprising the remainder of the debitage collection are 4 cm and 5 cm in length, respectively.

Provenience	CCS	Obsidian	Basalt	Welded Tuff	
Duff Scrapes	6/5*	1	1	1	
Shovel Test 1		1			
Shovel Test 2	4	1			
Shovel Test 3	2/3*				
Shovel Test 4	1/2*	1			
Shovel Test 5	3/1*				
Shovel Test 6	4/1*				
Shovel Test 7	1/2*				
ST 7, Lvel 2	1				
Shovel Test 8	2/3*				
Shovel Test 9	1				
Shovel Test 10					
Shovel Test 11					
Shovel Test 12	2/4*				
Shovel Test 13	1*	1			
Shovel Test 14					
Shovel Test 15	3*				
Shovel Test 16	3/2*				
Shovel Test 17	1/5*				
Shovel Test 18	1/2*				
Shovel Test 19					
Shovel Test 20	2/1*				
Shovel Test 21					
Shovel Test 22					
Shovel Test 23	4*				
TOTAL	35/39*	5	1	1	1

*Denotes thermal disaggregation products

Table 3.1. Debitage and thermal disaggregation products from duff scrapes and shovel test units at the Mill King archaeological site.

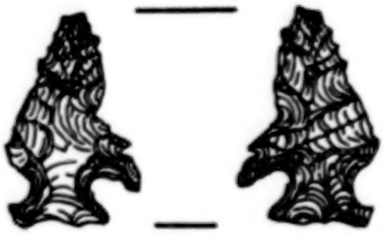

Figure 3.4. Projectile point recovered from Shovel Test 7 (shown actual size).

Thirty-nine pieces of cryptocrystalline silicate thermal disaggregation product comprise the final class of items recovered from the Mill King site. Thermal disaggregation products include two basic morphological forms. The first form is the familiar "pot lid" flake. The second form includes large pieces with three or more broadly concave and/or convex faces - some exhibiting points of detachment near the center of the broadly curved face - and the absence of bulbs of force. Because much of the CCS material from the Mill Creek drainage has flaws running through it some pieces of thermal disaggregation product from the area will exhibit a combination of angular faces as well as the broadly curvilinear faces noted above. The color of thermal disaggregation products ranges from grayish-white and pinkish-gray through reddish grays to dark gray. Some items may exhibit extensive crazing.

SITE PARAMETERS

1. Site Boundaries

The Mill King site is a low density lithic scatter covering an estimated 2500 m2 of BLM administered property. The site extends onto private property for an unknown distance.

2. Depth of Cultural Deposit

As noted in the section on cultural stratigraphy, conclusive evidence concerning the depth of the cultural deposit was not obtained. However, evidence from several other sites located in physical settings similar to the setting of the Mill King site indicate that it is highly likely the bulk of the cultural deposit is contained in the upper 5 to 10 cm ("O- horizon and immediately underlying transition zone) of the soil profile. Individual artifacts may have moved farther down the profile through krotovination. The maximum volume of the cultural deposit located on BLM administered property is approximately 125 m3.

3. Cultural Features

No cultural features were noted at the 5.75 m2 of "A" horizon surface exposed by shovel test units or the 12 m2 to 13 m2 exposed during duff removal. The very low density of cultural material may indicate a site type generally devoid of sub-surface features.

4. Site Integrity

The site has not been disturbed by past timber harvest or road construction activities. However, fire has adversely affected the lithic assemblage. Although undocumented, windthrow has almost certainly altered the cultural deposit during the past.

5. Density of Cultural Materials

An average density of 285 items/m3 was calculated for the total volume of excavated fill. (This figure includes cryptocrystalline silicate disaggregation,products. Excluding this item class the average density is 133 items/m3.)

FUNCTION AND CHRONOLOGY

The small sample size limits what can be inferred about the function of the Mill King site. The fact that the assemblage consists almost entirely of debitage would indicate that maintenance or manufacture of chipped stone tools was one important function performed at this site. The absence of decortation flakes (excepting the single flakes of basalt and welded tuff) and the generally small size of the cryptocrystalline silicate and obsidian debitage (72% is < 2 cm) is interpreted as indicative that little on no primary reduction occurred at the site.

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	Debitage Size in cms along axis of maximum dimension							
DEBITAGE TYPE	1/2	1	2	3	4	5	6	TOTAL
Prim. Cort. Flk.								
Sec. Cort. Flk.								
Int. Complete		4	1	2	1	1		9
Int. Broken		6	4	1	2	1		14
Int. Frag.		3	6	2				11
Ang. Debris	1							1
TOTAL	14	11	5	3	2			35

Table 3.2. Size distribution of crypotocrystalline silicate debitage from the Mill King archaeological site.

	Debitage Size in cms along axis of maximum dimension							
DEBITAGE TYPE	1/2	1	2	3	4	5	6	TOTAL
Prim. Cort. Flk.								
Sec. Cort. Flk.								
Int. Complete		2		1				3
Int. Broken	2							2
Int. Frag.								
Ang. Debris								
TOTAL	2	2		1				5

Table 3.3. Size distribution of obsidian debitage from the Mill King archaeological site.

The site is judged to contain a single component.

The single projectile point (and only tool) recovered is similar to broadly defined types assigned to the Late Archaic period in the upper Willamette Valley and the Upper Middle Fork (Willamette) drainage (Henn, Mack and Sanford 1975:539; Baxter 1986, Figures 31 and 32). This is not to suggest however, that the Mill King site be assigned to a particular period of time on the basis of a single temporally sensitive artifact.

SITE POTENTIAL AND SIGNIFICANCE

The cultural deposit on the BLM administered portion of the Mill King site has not ben disturbed by timber harvest or, similar "modern" activities nor is there evidence to suggest that it has been seriously disturbed by natural forces (windthrow, mass soil movement, etc.) in the past and therefore retains basic site integrity. However, it is my professional opinion that the cultural deposit lacks the necessary concentration of artifactural material to expect that additional excavation will yield significant new information. I do not consider this site to be eligible for listing on the National Register of Historic Places.

I do recommend that this site be monitored during timber harvest and that appropriate mitigative measures be taken if evidence is found which might refute my original assessment of site significance.

REFERENCES CITED

Baxter, Paul W.

1986 Archaic upland adaptations in the central Oregon Cascades. Unpublished Ph.D. Dissertation, Department of Anthropology, University of Oregon.

Beckham, Stephen Dow

1976 Indian distribution in Oregon. In Atlas of Oregon, edited by William G. Loy, pp. 6-7. University of Oregon Books, Eugene, Oregon.

Beckham, Stephen Dow, Rick Minor and Kathryn Anne Toepel

1981 Prehistory and History of BLM Lands in West-Central Oregon: A Cultural Resource overview. University of Oregon Anthropological Papers 25.

Connolly, Thomas J.

1983 Modeling prehistoric cultural systems in the Willamette Valley: a demonstration of regional diversity. In Contributions to the Archaeology of Oregon 1981-1982, edited by Don E. Dumond. Association of Oregon Archaeologists Occasional Papers 2:27-39.

Folansbee, Julia A.

1975 Archaeological remains at the Beebe site (35LA216) in the southeastern Willamette Valley foothills. In Archaeological Studies in the Willamette Valley, Oregon, edited by C. Melvin Aikens. University of Oregon Anthropological Papers 8:403-424.

Franklin, Jerry F. and C. T. Dyeness

1973 Natural vegetation of Oregon and Washington. Pacific Northwest Forest and Range Experiment Station General Technical Report PNW-8.

Henn, Winfield, Joanne M. Mack and Patricia R. Sanford

1975 Chronological ordering of selected projectile point assemblages from the Willamette Valley. In Archaeological Studies in the Willamette Valley, Oregon, edited by C. Melvin Aikens. University of Oregon Anthropological Papers 8:521-548.

Minor, Rick and Kathryn Anne Toepel

1980 A preliminary report on the Halverson site (35LA261): a seasonal campsite in the upper Willamette Valley, Oregon. Paper presented at the 33rd annual Northwest Anthropological Conference.

Minor, Rick and Kathryn Anne Toepel

1981 Archaeological overview. In Prehistory and History of BLM Lands in West-Central Oregon: A7-Cultural Resource Overview, by Stephen Dow Beckham, Rick Minor and Kathryn Anne Toepel. University of Oregon Anthropological Papers 25:117-183.

Southard, Michael D.

1986a An archaeological evaluation of the Mill Creek No. 6 site (35LA365), Lane County, Oregon. Report on file with the Bureau of Land Management, Eugene District Office.

1986b An archaeological evaluation of the Cornucopia site (35LA751), Lane County, Oregon. Report on file with the Bureau of Land Management, Eugene District Office.

1987 An archaeological evaluation of the Hatchery Tributary site (35LA469), Lane County, Oregon. Report on file with the Bureau of Land Management, Eugene District Office.

Toepel, Kathryn Anne and Stephen Dow Beckham
1981 Ethnographic overview. In Prehistory and History of BLM Lands in West-Central Oregon: A cultural Resource Overview, by Stephen Dow Beckham, Rick Minor and Kathryn Anne Toepel, University of Oregon Anthropological Papers 25:41-115.

White, John R.
1975 The Hurd site. In Archaeological Studies in the Willamette Valley, Oregon, edited by C. Melvin Aikens. University of Oregon Anthropological papers 8:141-225.

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An Archaeological Evaluation of the Hatchery Tributary Site (35LA469), Lane County, Oregon

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District Archaeologist

Bureau of Land Management
Eugene District

July, 1987

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ABSTRACT

Limited test excavations at the Hatchery Tributary Site (36LA469) located in the Hatchery Creek drainage of the McKenzie River watershed have demonstrated that this was a small task-specific site. The manufacture and maintenance of flaked stone tools was an important function of the occupants. The limited range of tools recovered points to activities associated with the manufacture and refurbishment of a tool kit used for hunting.

The presence of narrow-necked projectile point forms and a shouldered lanceolate point raises the possibility that the cultural deposit contains elements of a Late Archaic component and an earlier, possibly Early Archaic, component. The extensive and intensive disturbance of the cultural deposit caused by rodent burrowing precludes stratigraphic separation of the components.

Rodent burrowing, both extensive and intensive in nature; road construction and previous timber harvest activities have adversely effected the cultural deposit. The cultural deposit is judged to lack the necessary integrity to qualify for listing on the National Register of Historic Places.

INTRODUCTION

The Hatchery Tributary site (35LA469) is located in the McKenzie Resource Area of the Eugene District, Bureau of Land Management in western Oregon. The site is a low density lithic scatter covering 350 to 400 square meters of a small southeast aspect bench in the McKenzie River drainage. Logging and fire have both been factors in the post-depositional history of the site. Timber in the area was harvested in the third or fourth decade of this century. The most recent fire to burn over the site occurred shortly after the above noted timber harvest. This or earlier fires have produced adverse effects on the cryptocrystalline silicate portion of the lithic assemblage.

The purposes of the project reported here were to document the nature of the Hatchery Tributary site, the extent to which its integrity has been affected, and to evaluate the site's significance in terms of its eligibility for inclusion on the National Register of Historic Places.

LOCATION AND NATURAL SETTING

Located 5-1/2 kilometers northeast of the community of Leaburg (NE¼SW¼, Sec. 25, T. 16 S., R. 1 E., Willamette Meridian) the Hatchery Tributary site is located in the Western Cascade Range (Figure 4.1). The site is situated on a southeast aspect bench on the upper nose slope of a south trending spur ridge between Cogswell Creek and Hatchery Creek. A small spring-fed tributary of Hatchery Creek originates fifty meters north of the site. Lying at an elevation of 640 meters a.s.l. (2100 feet) the site is approximately 400 meters above, and three and one-half kilometers north of the McKenzie River.

The site is within the Tsuga heterophylla Forest Zone (Franklin and Dyrness 1973). Although the tract containing the site has been logged and is occupied by 40-50 year old second growth dominated by Douglas-fir unlogged stands nearby provide evidence concerning species composition of local "mature" forests. These stands of 100 to 200 year old trees are also dominated by Douglas-fir and represent a seral community which owes its existence to relatively frequent invasions by fire. Frequent fire scarred bases in these stands attest to past fires of less than stand replacement severity. Western hemlock and western red cedar are the other conifer constituents of these stands. Scattered specimens of bigleaf maple and golden chinkapin are present throughout these stands while red alder and an occasional cottonwood are present in riparian zones. The shrub layer includes vine maple, dogwood, hazel, Oregon grape and salal.

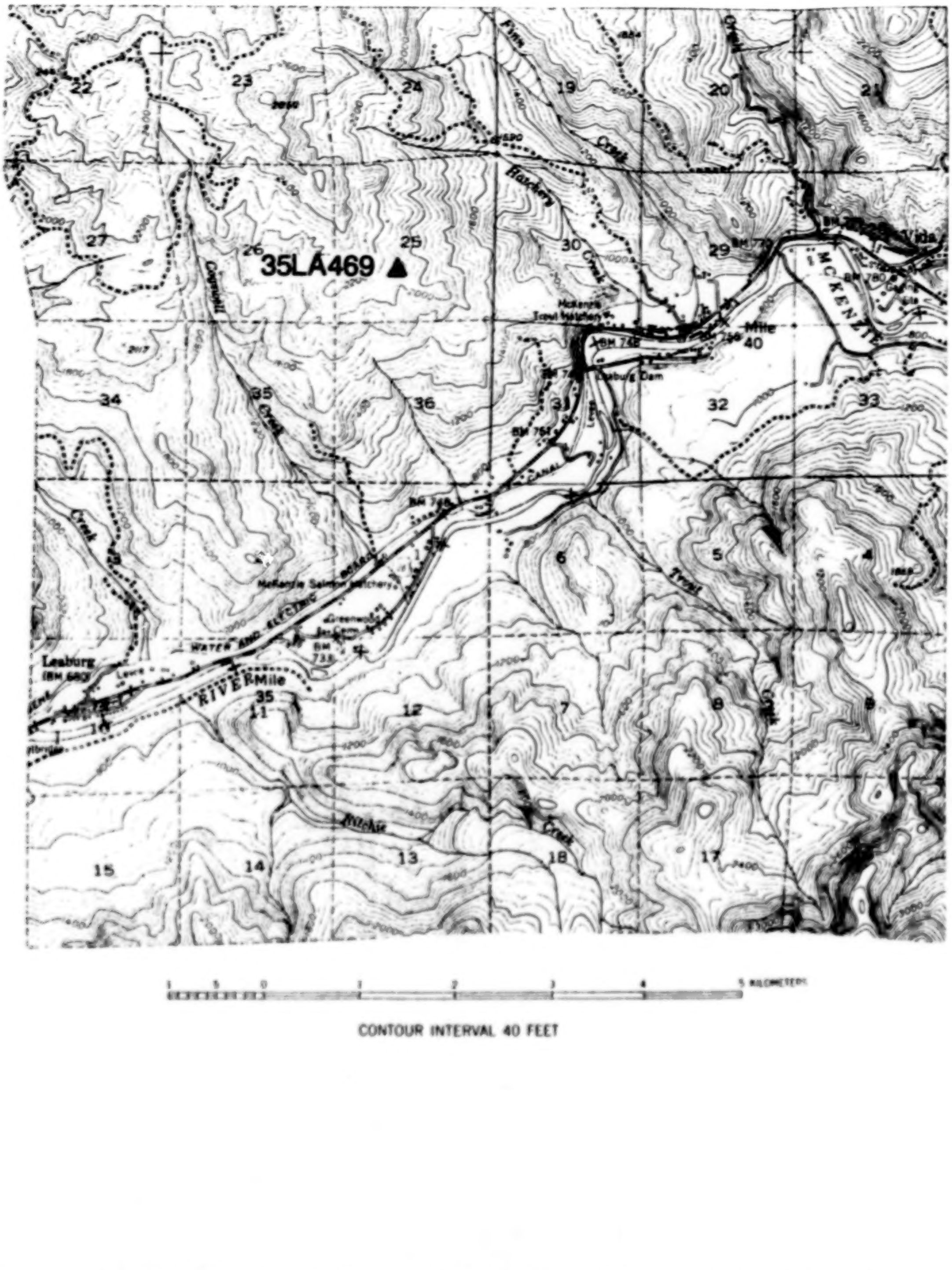

Figure 4.1. Location of the Hatchery Tributary site (35LA469). Base map is U.S.G.S. Leaburg, Ore. 15' quadrangle sheet, 1951 ed.

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ARCRAEOLOGICAL AND ETHNOGRAPHIC SETTING

A synthesis of the prehistory of the Upper and Middle Willamette basins and the adjacent Cascades foothills appears in the Cultural Resource Overview of the Bureau of Land Management's Eugene District (Beckham, Minor and Toepel 1981). Utilizing the small local data base available at the time the authors developed a provisional cultural chronology for the Cascade Foothills - read Western Cascades - consisting of three prehistoric and one historic period, each represented by a named phase, to cover the approximately 8000 year period of documented occupation (Minor and Toepel 1981:165-176 and Figure 22 and Table 14). In addition, foothills sites were divided into two classes: base camps and task specific sites. The authors utilized site size, depth of deposit and number of tool classes present in a site collection to define the dichotomous division (Minor and Toepel 1981:131).

The decade of the 80's has seen a flurry of archaeological investigation in the Western Cascades sponsored by the Federal land managing agencies. These investigations have resulted in a number of reports documenting both limited test excavations and more extensive data recovery efforts.

Baxter (1986b) has incorporated some of this information into an areal synthesis of the prehistory of the Upper Middle Fork Willamette River drainage. Utilizing data from the Colt and Saddle sites (Baxter 1986a), Vine.Rockshelter (Baxter and Connolly 1985), Rigdon's Horse Pasture Cave (Baxter, Cheatham, Connolly and Willig, 1983), and Baby Rock Shelter (Olsen 1975). Baxter (1986b:114-124) has developed a cultural sequence specific to the Upper Middle Fork drainage which differs somewhat from the sequence developed by Minor and Toepel. The major difference in the two sequences involves the duration of the Middle and Late Archaic periods. Both sequences recognize Middle Archaic assemblages as those whose projectile point assemblage is composed of predominantly "broad-necked" varieties. Minor and Toepel's Baby Rock phase begins at 4000 B.C. and ends at A.D. 200. Baxter's Staley phase also begins at about 4000 B.C. however, it endures until A.D. 1400. Baxter also addresses site function (1986b:147-159) and settlement-subsistence patterns (1986b:160-180) in the Upper Middle Fork drainage.

Brief publications describing limited excavations and surface collections at the Indian Ridge site (35LA194) (Henn 1975), the Tidbits site (35LIN100) (Minor and Toepel 1982), the Blitz site (35LA407) (Minor and Toepel 1984), the New Brave site (Jenkins and Churchill 1983) and the Scott (35LA430) and Boundless (35LA407) sites (Churchill and Jenkins 1984) constitute the only published site specific information regarding prehistoric archaeological sites in the McKenzie River drainage to date. None of these sites has produced material suitable for radiocarbon assay and only the Blitz site and the Indian Ridge site have produced more than minimal site assemblages.

The Tidbits site occupation is tentatively assigned to the Middle Archaic period based on the presence of two broad-necked projectile points (Minor and Toepel 1982:17). Occupation at the Blitz site is assigned to the Early Archaic period based on the presence of leaf-shaped lanceolates and continued into the Middle Archaic period based on the presence of broad-necked projectile points (Minor and Toepel 1984:53). No age assessment was made of the occupations at the New Brave, Scott, Boundless and Indian Ridge sites (Jenkins and Churchill 1983, Churchill and Jenkins 1984, Henn 1975).

Each of the six McKenzie River drainage sites noted here is located in a situation quite different from that of the Hatchery Tributary site. Firstly, these sites are located some 30 to 50 kilometers farther upstream in the McKenzie drainage and deeper into the Cascade range than the Hatchery Tributary site. Secondly, the Indian Ridge site is located 14 kilometers and the Tidbits site 11 kilometers away from the main stem of the McKenzie River and the Blitz, New Brave, Scott, and Boundless sites are situated in the drainages of major headwaters tributaries while the Hatchery Tributary site is located within 31/2 kilometers of the main stem of the McKenzie. Thirdly, the Hatchery Tributary site is situated at an elevation of 640 meters a.s.l. while the other sites are located at elevations ranging from 1146 meters a.s.l. (Tidbits) to 1920 meters a.s.l. (New Brave).

A summary of the ethnography of the southern Willamette Valley and the adjacent uplands may be found in the Cultural Resource Overview for the Bureau of Land Management's Eugene District (Beckham, Minor and Toepel 1981:41-114). Sites in the Middle McKenzie River drainage, including the Hatchery Tributary site were on the boundary between the Mohawk band of the Kalapuya and the Upper Santiam band of the Molala at the time of Euro-American contact (Beckham 1976, Toepel and Beckham 1981:86).

FIELD PROCEDURES

The Hatchery Tributary site was discovered during the course of a post-harvest cultural resource inventory survey conducted on November 25, 1980. At that time a dozen pieces of cryptocrystalline silicate debitage were discovered in a fire trail which exposed the northern margin of the site (see Figure 4.2). This material was collected and a site record was completed but no attempt was made to ascertain either the horizontal or vertical limits of the deposit. The present evaluation of the Hatchery Tributary site was necessitated by a proposed FY88 timber sale (a commercial thinning operation) which includes the site area within the project boundary.

After establishing a primary datum (off site and beyond the project boundary) and a secondary datum (on site) eight 50 x 50 centimeter shovel test units were excavated in order to better define the horizontal limits of the site. Shovel test units 1-4, 6-7 were excavated to a depth of 10 centimeters below the surface of the "Oi" (Department of Agronomy, Cornell University 1986) soil horizon in a single vertical level. Shovel test unit 5, where no clearly definable "Oi" horizon was discovered, was excavated in a single 10 cm level beginning at the surface of the "A" horizon. Shovel test unit 8 was excavated to a depth of 15 centimeters below the surface of the "Oi" soil horizon in a 10 centimeter and a 5 centimeter level. All excavated soil from the shovel test units was passed through a 1/8-inch mesh screen.

In order to determine the depth of the cultural deposit, to gain a better understanding of the stratigraphy and to obtain a larger sample of artifactual material three test pits were excavated. Test Pit No. 1 was a 1 x 2 meter unit excavated to a depth of 25 centimeters below the surface of the "Oi" layer in 5 centimeter levels. Test Pit No. 2 was begun as a 1 x 2 meter unit and excavated to 10 centimeters below surface as such. It was then reduced to a 1 x 1 meter unit and excavated to a depth of 50 centimeters below the surface of the "Oi" soil layer. Excavation was conducted in 5 centimeter levels. Test Pit No. 3 was a 1 x 1 meter unit excavated to a depth of 50 centimeters below the surface of the "Oi" soil layer in a series of 5 centimeter levels. All excavated soil from the three test pits was passed through a ¼-inch mesh screen and a 25% sample of the excavated soil (by volume) was passed through a 1/8 inch mesh screen.

A total of 1.7125 m3 of fill was excavated. Since at least one piece of culturally linked material was discovered in every unit/level except shovel test unit 4 the amount of cultural bearing deposit excavated would appear to be 1.6875 m3. However, this is misleading because extensive rodent burrowing, and possible disturbance from the initial timber harvest, have resulted in a downward displacement of cultural debris to the extent that it is no longer possible to define a stratigraphic unit(s) clearly associated with the cultural deposit.

The final phase of field work was the making of a topographic map of this site which also shows the location of shovel tests and test pits and the horizontal limits of the site (see Figure 4.2).

STRATIGRAPHY

Stratum 1. Stratum 1 is a very dark gray (10YR3/1) friable silt loam with a very high organic content. Partially decayed twigs, fir cones and fir needles are present in this "Oi" horizon soil. Also present are small fragments of charcoal and small rounded to sub-angular fragments of incompletely weathered rock derived from the parent material which formed the "A" horizon soil. Rock fragments range in size from 3mm dia. to 1 cm dia. Stratum 1 is 3 to 5 cm thick.

Stratum 2. Stratum 2 is a dark reddish brown (2.5YR2.5/4) compact silty clay to clay mineral soil corresponding

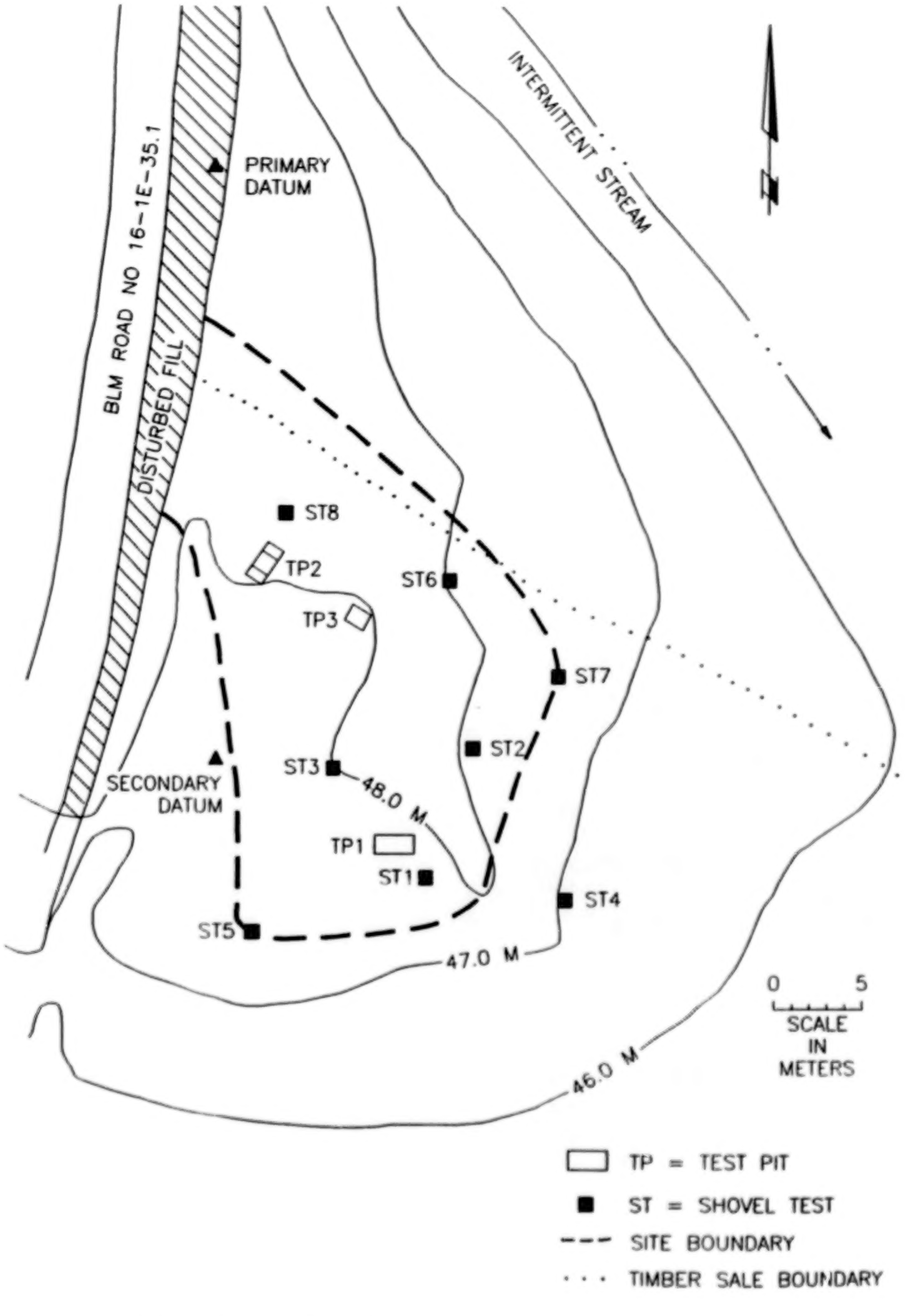

Figure 4.2. Site map of the Hatchery Tributary site (35LA469).

to the "A" horizon. This soil contains up to 35% rock fragments (sub-angular pieces of parent material) and is at least 50 cm thick. (Exposures in a nearby roadcut indicate that the "A" horizon is 50 to 100 cm thick.) The contact between strata 1 and 2 consists of a 10 to 15 cm thick zone of mixed "O" and "A" horizon soil. Krotovina filled with stratum 1 soil penetrate this mixed soil zone and may be seen in profiles. The contact between the mixed strata zone and unmixed stratum 2 is uneven. Numerous krotovina filled with stratum 1 and mixed strata penetrate stratum 2 and are discernable in both plan and profile (See Figures 4.3, 4.4, 4.5A, 4.5B for stratigraphic profiles).

A portion of a large, roughly basin-shaped pit filled with a mixed fill was discovered during the excavation of Test Pit 3. The fill of this feature was slightly darker in color and less consolidated in texture than the mixed strata zone lying between stratum 1 and stratum 2. Fragments of charcoal and partially carbonized tree root pieces were dispersed throughout the fill. This feature is interpreted as the remains of a natural depression caused by the rootwad of a windthrown tree. The depression refilled with the decayed and/or burned remnants of the rootwad and the upthrown "O" and "A" horizon soils.

At this point a word is in order regarding the krotovina so evident in the test excavations at the Hatchery Tributary site. Animal burrows and root casts, both open and filled, are quite common in the soil profile of almost any forested environment. However, many of the numerous krotovina attributable to animal burrowing activities at the Hatchery Tributary site are particularly large and deep. This is due to the fact that these burrows were dug by mountain beaver (Aplodontia rufa). A small colony of these animals presently inhabits the riparian zone along the northern periphery of the site and occupied a larger portion of the site prior to closure of the forest canopy and concomitant reduction in forage and cover plants. Each mountain beaver excavates an extensive burrow system and nest which it guards zealously against trespass by others of its own kind. These burrows are commonly 15 to 20 centimeters in diameter, occasionally as large as 25 centimeters, and may run from just below the ground surface to 50-60 centimeters deep. The circular nest chambers are located 30 to 150 centimeters below the surface and are large enough to contain up to a bushel of vegetation. Other chambers excavated near the nest are used for "toilets" and for food storage (Maser, Mate, Franklin and Dyrness 1981:142).

Evidence for Wildfire

Three lines of evidence support the contention that wildfire has burned through the area of the Hatchery Tributary site. An occasional old growth tree which was not cut during the initial harvest in the area as well as a few remaining stumps of trees harvested at that time bear basal fire scars. In fact, the stumps are extensively burned and may record a fire burning through heavy slash following the initial harvest.

Small fragments of charcoal are abundant in stratum 1 and in the fill of the larger krotovina. Some krotovina also contain fill consisting of a mixture of oxidized soil, charcoal fragments and wood ash which appears to have washed into the open burrows during the first heavy rains following an intense burn. This is consistent with the understanding that a fire swept through the heavy slash left after the initial harvest within a few years following the harvest.

Finally, much of the cryptocrystalline silicate material exhibits physical changes attributable to prolonged exposure to high temperatures. This category of evidence includes 166 pieces of thermally produced CCS angular waste (note that there is no "on site" source of naturally occurring cryptocrystalline silicate) and eight tools or tool fragments exhibiting multiple pot-lid flake scars.

DESCRIPTION OF CULTURAL MATERIALS

Twelve tools, 250 pieces of debitage and 166 pieces of thermal disaggregation product were recovered from the shovel tests and test pit excavations. Three lithic raw materials are represented in the site collection; cryptocrystalline silicate, obsidian and basalt.

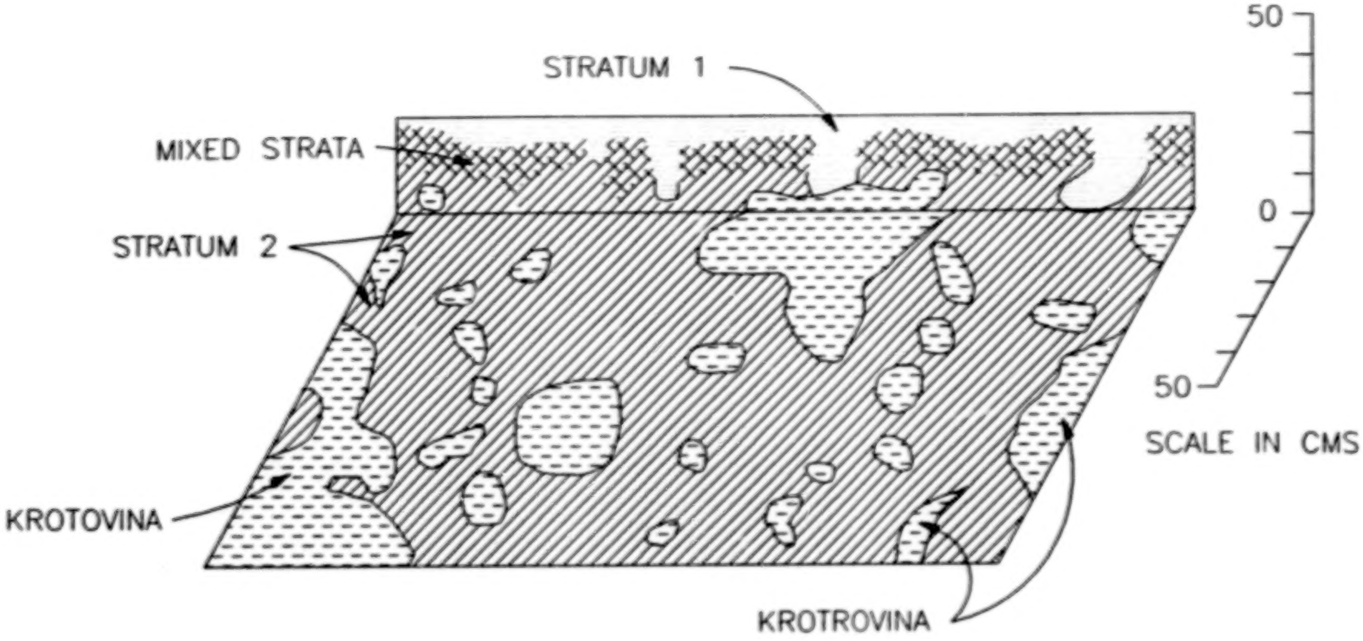

Figure 4.3. Profile of north wall of Test Pit 1 and floor plan at base of level 5 (-25 cm).

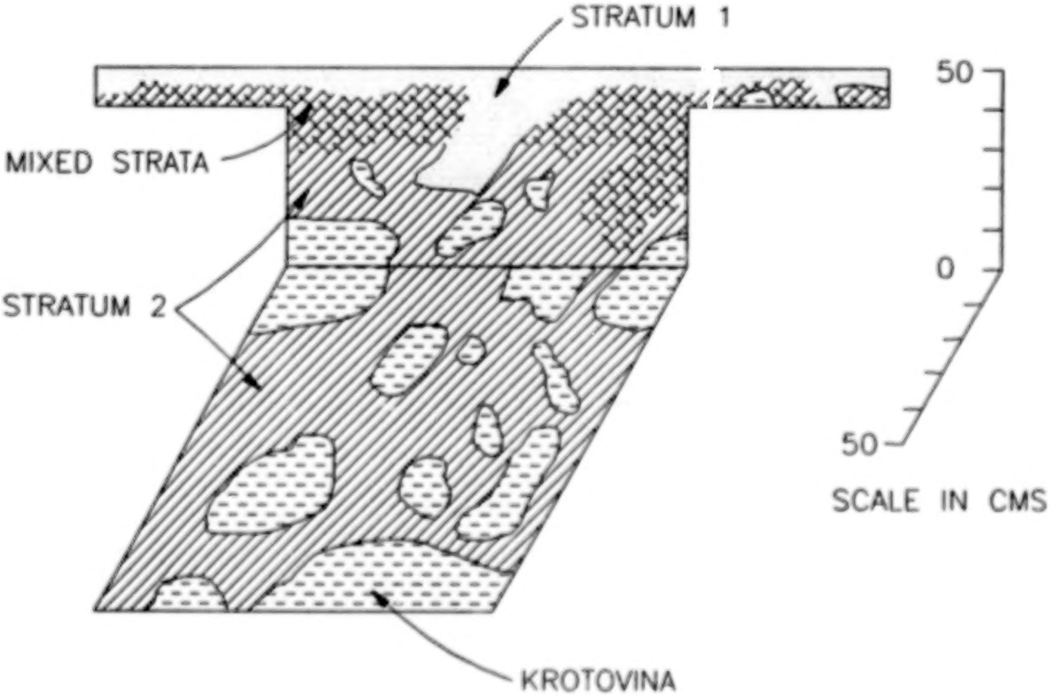

Figure 4.4. Profile of west wall of Test Pit 2 and floor plan at base of level 10 (-50 cm).

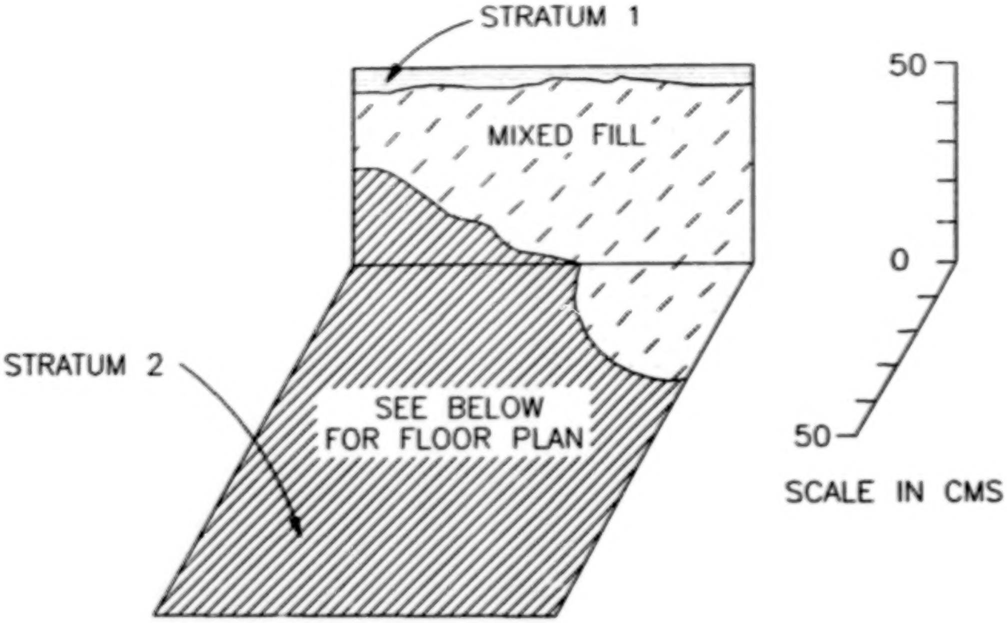

Figure 4.5A. Profile of south wall of Test Pit 3 and partial floor plan at base of level 10 (-50 cm).

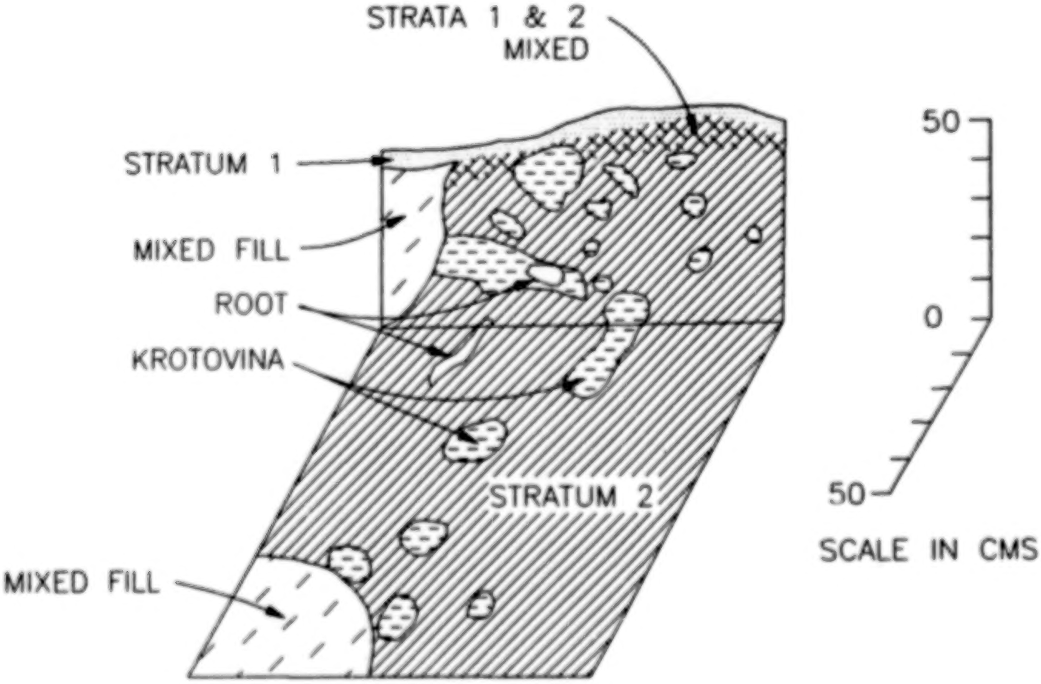

Figure 4.5B. Profile of north wall of Test Pit 3 and floor plan at base of level 10 (-50 cm).

Eleven of the tools (92.5%) and 195 pieces of the debitage (78%) are cryptocrystalline silicate material while one tool (7.5%) and 54 pieces of the debitage (21.6%) are obsidian. A single piece of basalt debitage (0.4%) was recovered from Test Pit 2, Level 10. If the thermal disaggregation products are included in the debitage category the percentage by material type is as follows: cryptocrystalline silicates 86.8%, obsidian 13%, basalt 0.2%. Distributional data for tools and debitage recovered from the Hatchery Tributary site is presented in Tables 4.1 thru 4.5. Cryptocrystalline silicate and obsidian debitage size data is presented in Tables 4.6 and 4.7.

	PROVENIENCE				
TOOL TYPE	Shovel 1 Test 1	Shovel 1 Test 3	Test Pit 2	Test Pit 3	TOTAL
Projectile Points and Fragments	1*		1	1	3
Bifacially Worked Fragments			4+	2	6
Unifacially Worked Fragments			1		1
Culturally Modified Flakes		1	2		3
TOTAL	1	1	8	3	13

*Obsidian Tool

+Two of the items fit together. This would reduce, total recovered tools to 12.

Table 4.1. Distribution of Tools Recovered from Excavations at the Hatchery Tributary site (35LA469).

Projectile Points

One complete projectile point, one fragment identifiable as the stem of a narrow neck point, and a foliate biface which might be classified as either a projectile point - it is within the size range of the foliate bifaces from Cascadia Cave which Newman (1966:13) classified as projectile points - or a knife were recovered from the Hatchery Tributary site. In addition, three bifacially worked fragments which are almost certainly the distal portions of projectile points were also recovered.

The complete projectile point was recovered from Test Pit 3. This specimen is a small triangular, corner or basal notched point with an expanding stem, a straight to slightly convex base, pointed barbs and slight serrations on the lateral margins of the blade (Figure 4.6,a). The item has a thin biconvex or lenticular cross section and longitudinal section. The specimen is 22 mm in length, 15 mm wide, 3.5 mm thick and ha-s a neck width of 4 mm. The material is cryptocrystalline silicate. This specimen is similar to White's Type 10 points (1975:127-128) from the Upper Willamette Valley and Baxter's Type 5 points (1986b: Figures 12, 17, 22, 28 and 30) from the Upper MIddle Fork drainage. This form of point is common in Late Archaic assemblages in the upper Willamette Valley and in the Upper Middle Fork drainage.

The stem fragment was recovered from shovel Test 1. This specimen has straight sides and a straight to slightly concave base and a width of 5 mm. The material is obsidian.

The foliate biface was recovered from Test Pit 2. This specimen has a rounded base, a somewhat blunt distal terminus and a clearly defined shoulder along the left margin (Figure 6, b). The widest point of this specimen is located just distal to the shoulder. The specimen has a lenticular cross section and longitudinal section. The item is 52 mm long, 27 mm wide and 8 mm thick. The material is cryptocrystalline silicate. This specimen falls within the range of metric attributes for foliate bifaces from Cascadia Cave and several of the specimens illustrated appear to have a slight shoulder (Newman 1966:13 and Figure 3,q,t.). There is also some general similarity between the Hatchery Tributary specimen and a shouldered point recovered from weathered till beneath a primary airfall deposit of Mazama tephra at the Odell Lake site (Cressman 1948:58 and Figure B,a).

Bifacially Worked Fragments

Six bifacially worked fragments (two of which fit together) were recovered from the test pit excavations. All six items are made from cryptocrystalline silicate material. Three of the specimens (Figure 4.6,c,d) appear to be distal portions of projectile points. One of the remaining specimens is part of a lateral margin of a larger biface object, perhaps a knife. The two remaining specimens can be fitted together and appear to be a portion of a biface which was broken during a process comparable to Callahan's biface reduction Stage 3 (Callahan 1970:Table 1).

Unifacially Worked Fragment

A single unifacially worked fragment was recovered from test excavations at the Hatchery Tributary site. This fragment consists of a straight working edge fragment 25 mm in length. The angle of the bit is between 65° and 70°. The specimen is cryptocrystalline silicate.

Culturally Modified Flakes

Three specimens of this object class were recovered, two items from test pits and one item from a shovel test unit. All three specimens are cryptocrystalline silicate.

Lithic Debitage

Six classes of debitage are recognized in this study; primary cortex flakes, secondary cortex flakes, complete interior flakes, broken interior flakes, interior flake fragments and angular waste. Primary cortex flakes have cortex on 90-100% of the dorsal surface while cortex covers less than 90% of the dorsal surface of secondary cortex flakes. Interior flakes have no cortex on them. Complete interior flakes are just that -- whole. Broken interior flakes have an intact platform and bulb of force but are not whole, while interior flake fragments are distal fragments lacking the platform and some or all of the bulb of force. Angular waste consists of pieces with four or more facets lacking the attributes of flakes.

One additional culturally relevant class of items recognized in this study are thermal disaggregation products. This class of items includes several morphological forms. There are pot lid flakes and larger pieces with three or more broadly concave and/or convex faces--some exhibiting points of detachment near the centers of the broadly curved surfaces--and an absence of bulbs of force. The color of these items at the Hatchery Tributary site ranges from pinkish-gray through a range of "brick reds" and "terra-cotta" browns to mottled gray. Some items exhibit crazing. This item class is considered to be culturally relevant because there is no on site natural source of cryptocrystalline silicate material therefore, all thermal disaggregation products represent material transported to the site (presumably prior to being thermally altered). All items in this class are cryptocrystalline silicate material.

As noted previously, the majority (78%) of the debitage is cryptocrystalline silicate material. If one includes thermal disaggregation products in the equation 86.8% of the lithic material (exclusive of tools) recovered from the Hatchery Tributary site is cryptocrystalline silicate.

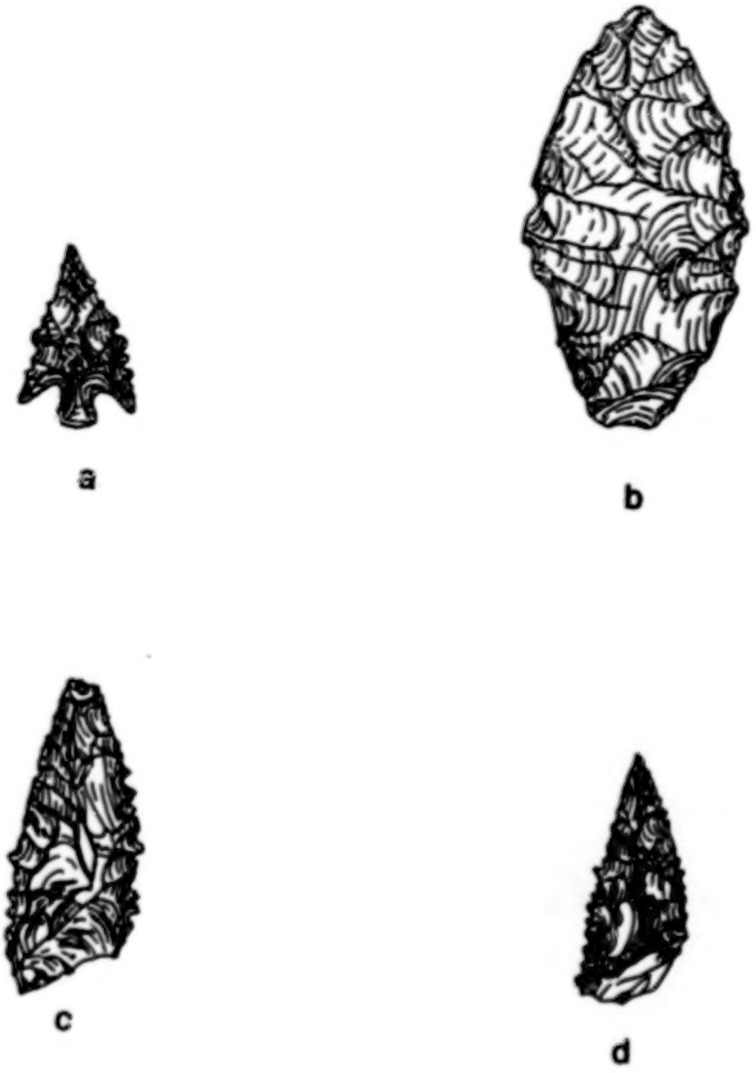

Figure 4.6. Projectile points and distal fragments from the Hatchery Tributary site (35LA469) (shown actual size).

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Only one primary cortex flake and one secondary cortex flake, both CCS, were recovered. Initial reduction of lithic materials obviously was carried out at other locations. The nearest known source of cryptocrystalline silicate material is located less than 1 2 kilometer away near the center of Section 25, T. 16 S., R. 1 E., W.M.

Flake sizes (whole, broken and fragments) of cryptocrystalline silicate materials range from 1 cm to 5 cm along the axis of maximum dimension (see Table 4.6). However, 88% of the items are in the range between 1 cm and 3 cm with the median and mode falling within the 2 cm size class and the mean size falling just outside that size class (2.17 cm).

Flake sizes of obsidian debitage range between 1/2 cm and 6 cm along the axis of maximum dimension (see Table 4.7). Ninety percent of the items are in the range between 1/2 cm and 2 cm with the median and mode falling within the 1 cm size class and the mean size (1.6 cm) being less than 2cm.

The single basalt flake recovered is in the 3 cm size class.

Cryptocrystalline silicate material constitutes the major raw material class at the Hatchery Tributary site accounting for 78% (86.8% if thermal disaggregation products are included) of all debitage and eleven of twelve tools. This contrasts markedly with lithic material percentages noted at sites higher up the McKenzie drainage---99+% obsidian at the Tidbits site (Minor and Toepel 1982:8) 97% obsidian tools and 99+% obsidian debitage at the Blitz site (Minor and Toepel 1984:25), 99% obsidian debitage at the Scott and Boundless sites (Churchill and Jenkins 1984:16, 25), 99% obsidian debitage at the New Brave site (Jenkins and Churchill 1983:16) and 93% obsidian debitage at the Indian Ridge site (Henn 1975:Figure 3).

Similar differences in the percentage of obsidian and cryptocrystalline silicate material between high elevation and low elevation sites was observed to occur in the Middle Fork Willamette River drainage (Southard 1986b:19, 20).

Lithic raw material percentages for the Hatchery Tributary site more closely resemble those from the Halverson site 35LA261 - (Minor and Toepel 1980:8) and the Mill Creek No. 6 site - 35LA265 (Southard 1986a:8) located in the Mohawk River drainage some nineteen kilometers to the east. The Mohawk River is a low elevation lateral tributary of the McKenzie River which drains territory occupied by the Mohawk band of the Kalapuya during the early historic period. Considerable research remains to be conducted in order to determine the meaning and relevance within the Willamette Basin scheme of prehistory of observed differences in lithic material frequencies similar to those noted above.

SITE PARAMETERS

1. Site Boundaries

   The Hatchery Tributary site consists of a single low density lithic scatter covering an area between 350 m2 and 400 m2 on a small southeast aspect bench.

2. Depth of Cultural Deposit

   Test excavation results do not provide a clear indication of the depth of the cultural deposit. Test Pit 1 produced very little material and was clearly situated near the periphery of the site. Test Pit 2 produced cultural material from each level between the surface and 50 cm below the surface where excavation was halted. This test pit also revealed an extensive network of krotovina and the excavation fostered the suspicion that the vertical distribution of artifacts was a product of these burrowing activities. The excavation of Test Pit 3 heightened that suspicion when it was possible to determine that no artifactual material was recovered below 25 cm that did not come from the fill of krotovia or the fill of a natural depression. What is obvious is that extensive rodent burrowing has acted to destroy any congruence

Provenience	DEBITAGE TYPE Primary Cortex Flakes		Secondary Cortex Flakes		Interior Flakes		Borken Interior Flakes		Interior Flake Fragments		Angular Waste		Thermally Protected Angular Waste		TOTAL	
Raw Material	CCS	Obsid	CCS	obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid
Shovel Test 1 0-10 cm						8		4	1	1					1	13
Shovel Test 2 0-10 cm							1		2						3	
Shovel Test 3 0-10 cm							2		1		1				4	
Shovel Test 4 0-10 cm																
Shovel Test 5 0-10 cm						1										1
Shovel Test 6 0-10 cm					1		3		8				3		12*	
Shovel Test 7 0-10 cm									1						1	
Shovel Test 8 0-10 cm					1		2		3		2		11		8*	
Shovel Test 8 10-15 cm									1				4		1*	
TOTAL					2	9	8	4	17	1	3		18		30*	14

*Does not include thermal disaggregation products.

Table 4.2. Distribution of Debitage Recovered from Shovel Test Units at the Hatchery Tributary site. (35LA469).

Provenience	DEBITAGE TYPE Primary Cortex Flakes		Secondary Cortex Flakes		Interior Flakes		Borken Interior Flakes		Interior Flake Fragments		Angular Waste		Thermally Protected Angular Waste		TOTAL	
Raw Material	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid
Level 1 0-5 cm							1		3				2		4*	
Level 2 5-10 cm																
Level 3 10-15 cm																
Level 4 15-20 cm																
Level 5 20-25 cm					1				1						2	
TOTAL					1		1		4				2		6*	

*Does not include thermal disaggregation products.

Table 4.3. Vertical Distribution of Debitage Recovered from Test Pit 1, Hatchery Tributary site (35LA469).

	DEBITAGE TYPE															
Provenience	Primary Cortex Flakes		Secondary Cortex Flakes		Interior Flakes		Borken Interior Flakes		Interior Flake Fragments		Angular Waste		Thermally Protected Angular Waste		TOTAL	
Raw Material	CCS	Obsid	CCS	obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid
Level 1 0-5 cm	1		1		2	1	5	1	17	6	1		21		27*	8
Level 2 5-10 cm					1	1		2	7	1			4		8*	4
Level 3 10-15 cm					1			1	5	1			7		6*	2
Level 4 15-20 cm							3		5	1			8		8*	1
Level 5 20-25 cm						2	4	1	2	1			7		6*	4
Level 6 25-30 cm					1		4		3	2			3		8*	2
Level 7 30-35 cm					1		6	1	7	5			17		14*	6
Level 8 35-40 cm							5	2	15	6			18		20*	8
Level 9 10-15 cm					3		6		8		1		9		18*	
Level 10 45-50 c,					2		2	1	1						5	1
TOTAL	1		1		11	4	35	9	60	23	2		94		120*	36

*Does not include thermal disaggregation products. Note: a single basalt interior flk. frag. was recovered from level 10.

Table 4.4. Vertical Distribution of Debitage Recovered from Test Pit 2, Hatchery Tributary site (35LA469).

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Provenience	DEBITAGE TYPE Primary Cortex Flakes		Secondary Cortex Flakes		Interior Flakes		Borken Interior Flakes		Interior Flake Fragments		Angular Waste		Thermally Protected Angular Waste		TOTAL	
Raw Material	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid
Level 1 0-5 cm					3	1	3		3		2		7		11*	1
Level 2 5-10 cm						1	3		5				5		8*	1
Level 3 10-15 cm					2		5	1					10		7*	1
Level 4 15-20 cm									1				7		1*	
Level 5 20-25 cm					1		1		3				3		5*	
Level 6 25-30 cm								1	1				2		1*	1
Level 7 30-35 cm													5			
Level 8 35-40 cm							1						4		1*	
Level 9 40-45 cm							1		2				6		3*	
Level 10 45-50 cm									2				3		2*	
TOTAL					6	2	14	2	17		2		52		39*	4

*Does not include thermal disaggregation products.

Table 4.5. Vertical Distribution of Debitage Recovered from Test Pit 3, Hatchery Tributary site (35LA469).

CCS	Debitage Size in cms along axis of maximum dimension							
DEBITAGE TYPE	1/2	1	2	3	4	5	6	TOTAL
Prim. Cort. Flk.					1			1
Sec. Cort. Flk.					1			1
Int. Complete			12	4	2	2		20
Int. Broken	12	31	9	6				58
Int. Frag.	18	68	20	2				108
Ang. Debris		2	4	1				7
TOTAL 195	30	113	37	13	2			195

Table 4.6. Size distribution of Cryptocrystalline Silicate Debitage from the Hatchery Tributary site (35LA469).

Obsidian	Debitage Size in cms along axis of maximum dimension							
DEBITAGE TYPE	1/2	1	2	3	4	5	6	TOTAL
Prim. Cort. Flk.								
Sec. Cort. Flk.								
Int. Complete	3	10	2					15
Int. Broken	4	7	6	2				19
Int. Frag.	1	7	9	1	1		1	20
Ang. Debris								
TOTAL 54	8	24	17	3	1		1	54

Table 4.7. Size Distribution of Obsidian Debitage from the Hatchery Tributary site (35LA469).

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between a stratigraphic unit(s) and the cultural deposit. The volume of this mixed deposit through which cultural material is dispersed may be as great as 50 M^3.

3. Cultural Features

No cultural features were noted in the 7 m2 excavated. This small sample (<2% of site area) provides no assurance that features are or are not present. However, the extensive burrowing activity noted coupled with the knowledge that the site is in an area that was logged more than fifty years ago with unknown disturbance to the deposit probably precludes the presence of undisturbed cultural features.

4. Site Integrity

A number of forces have acted to disturb the cultural deposit at the Hatchery Tributary site. Harvest of old growth on the site some 50 to 60 years ago had an unknown, but certainly deleterious, effect on the deposit.

Construction and re-construction of BLM Road No. 16-IE-35.1 removed the culture deposit from the northwestern portion of the site. An area possibly as large as 50 m2 was affected by this disturbance.

Rodents, particularly aplodontia, have produced the most readily assessable disturbance to the cultural deposit. Burrowing has resulted in the vertical displacement of cultural materials through a 50+ cm zone of disturbed soil at some locations within the site. Windthrow has also contributed to soil displacement.

Fire, perhaps following the initial harvest of timber, has adversely affected the cryptocrystalline silicate portion of the assemblage by pot-lidding, blocky disaggregation, crazing and color changes as noted elsewhere. The fire also produced copious amounts of wood charcoal which has been dispersed through the deposit by burrowing activity. This recent charcoal poses the threat of contamination to any feature (hearth, etc.) which might contain otherwise datable amounts of "culturally relevant" wood charcoal.

5. Density of Cultural Materials

An average density of 254 items/m3 was calculated for the total volume of excavated fill. (This figure includes cryptocrystalline silicate thermal disaggregation products. Excluding this item class the average density is 155 items/m3.

FUNCTION AND CHRONOLOGY

The assemblage consists of 95% debitage indicating that the manufacture and maintenance of flaked stone tools was an important function at the Hatchery Tributary site. The virtual absence of decortation flakes (2) and the generally small size of the debitage (76.8% is $\leq$ 2cm) is interpreted as evidence that little or no primary reduction occurred at the site.

The small number of tools recovered precludes any but the most general assessment of function. The limited range of items recovered points to a task specific site perhaps associated with hunting and the refurbishment of a tool kit used for hunting.

The narrow-necked projectile point and point fragment are similar to forms found in Late Archaic Hurd phase assemblages in the southern Willamette Valley and the Late Archaic Colt phase in the Upper Middle Fork drainage. The Hurd phase is dated between A.D. 250 and A.D. 1750 (Minor and Toepel 1981:Figure 22). The Colt phase is dated between A.D. 1400 and A.D. 1800 (Baxter 1986b:121). The presence of the shouldered lanceolate specimen in the small site collection raises the possibility of a second and probably earlier component at the Hatchery Tributary site. Given the extremely small size of the site collection a second component remains no more than a suggested possibility. Additionally, in light of the extensive stratigraphic mixing noted it is doubtful that any but the most stylistically distinctive elements of represented multiple components could be identified.

The vertical distribution of artifactual material recovered from test pit excavations may provide a second line of evidence useful in assessing the possibility that two or more components are present in the cultural deposit. A table listing tools recovered by excavations level (see Table 4.8) does hint at a bimodal distribution of tools; however, the sample size is so small that sampling vagaries might be responsible for the observed distribution.

	Proj. Points and Frags.	Biface Frags.	Uniface Frags.	Cult. Mod. Flakes	Proj. Points and Frags.	Biface Frags.	Uniface Frags.	Cult. Mod. Flakes	Proj. Points and Frags.	Biface Frags.	Uniface Frags.	Cult. Mod. Flakes
Elevation Surface 0 Level 1 5										2^{4c}		
Level 2 10						1			1^{4a}			
Level 3 15												
Level 4 20												
Level 5 25												
Level 6 30					1^{4b}							
Level 7 35						1^{4d}						
Level 8 40							1					
Level 9 45						2*		2				
Level 10 50												
	Test Pit 1				Test Pit 2				Test Pit 3			

*The two fragments fit together.

Table 4.8. Vertical distribution of tools recovered from test pit excavations at the Hatchery Tributary site (35LA469). Superscript numero-alphic codes refer to figure designations of artifacts as pictured in main body of report.

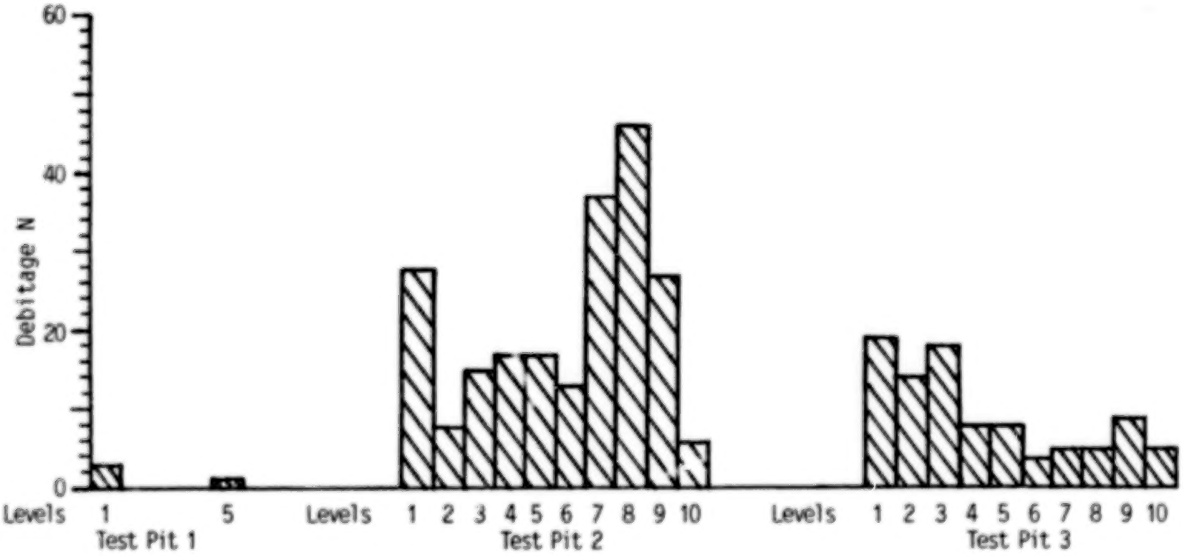

Figure 4.7. Debitage/5 cm level recovered from test pit excavations at the Hatchery Tributary site (35LA469). Note: the original debitage counts for levels 1-5, PT 1 and levels 1 & 2, TP 2 were adjusted downward by 50% for this figure. This was done because these units/levels were 1x2x0.05 m in size

while all other unit/levels were 1x1x0.05 m in size.

A plot of debitage by unit/level does display a bimodal distribution for test pits 2 and 3 although the distribution is most pronounced for the test pit 2 material (see Figure 4.7). Test pit 1 did not yield a large enough sample to produce a meaningful distribution plot. One interpretation of the observed distributional pattern is the presence of two components, the most recent represented by material from level 1 of test pit 2 and levels 1-3 of test pit 3 while an earlier component is represented by material from levels 7-9 of test pit 2 and levels 9-10 of test pit 3.

These observations tend to disregard the potential effect of rodent burrowing on the vertical distribution of lithic artifacts in a cultural deposit. Some insight into this effect at the Hatchery Tributary site may be generated from the observation that no cultural material was recovered below the base of level 5 in test pit 3 which did not come from the fill of krotovina or from the fill of the natural depressions.

Ultimately, in order to resolve the role that rodent burrowing has played in the vertical distribution of cultural material at the Hatchery site an additional unit or units must be excavated and "distrubed" fill carefully segregated from undisturbed soil.

SITE POTENTIAL AND SIGNIFICANCE

The cultural deposit at the Hatchery Tributary site has been extensively and intensively disturbed by rodent burrowing. As a result cultural material has been dispersed throughout a mixed zone which may exceed 50 cm thickness at some locations. Additional, but unquantified, disturbance was caused by a previous timber harvest and road construction. Although the site may provide some valuable information regarding aboriginal utilization patterns in the uplands bordering the mid-McKenzie River valley it is my professional opinion that the site lacks the necessary integrity to qualify for listing on the National Register of Historic Places.

I do recommend that steps be taken to avoid additional adverse impact on the site to the extent possible. To accomplish this I will recommend posting the site boundaries and prohibiting surface occupation of the site proper. This action would permit the thinning of the stand and removal of the trees to be harvested but would prohibit the construction of a landing or spur road on the site. The yarding of a couple of dozen 8" to 10" d.b.h. trees across the site will not measurably impact the site compared to the impact generated by past actions.

REFERENCES CITED

Baxter, Paul W.

1986a The Colt and Saddle Sites: Excavations on Dead Horse creek. A report to the Willamette National Forest by the Department of Anthropology, University of Oregon.

1986b Archaic upland adaptations in the central Oregon Cascades. Unpublished Dissertation, Department of Anthropology, University of Oregon.

Baxter, Paul W., and Thomas J. Connolly

1985 Vine Rockshelter: A report of excavations at an intermittent hunting camp in the Western Cascades. A report to the Rigdon District, Willamette National Forest by Baxter and Connolly, Archaeological Data Consultants.

Baxter, Paul W., Richard D. Cheatham, Thomas J. Connolly, and Judith A Willig

1983 Rigdon's Horse Pasture Cave: an upland hunting camp in the western Cascades. University of Oregon Anthropological Papers 28.

Beckham, Stephen Dow

1976 Indian distribution in Oregon. In Atlas of Oregon, edited by William G. Loy, pp. 6-7. University of Oregon Books, Eugene, Oregon.

Beckham, Stephen Dow, Rick Minor and Kathryn Anne Toepel

1981 Prehistory and history of BLM lands in west-central Oregon: acultural resource overview. University of Oregon Anthropological Papers 25.

Callahan, Errett

1979 The basics of biface knapping in the Eastern fluted point tradition: a manual for flintknappers and lithic analysts. Archaeology of Eastern North America, Vol. 7, No. 1.

Churchill, Thomas E. and Paul Christy Jenkins

1984 Archaeological evaluation of the Scott and Boundless sites. Report to the Willamette National Forest by Coastal Magnetic Search and Survey.

Cressman, L.S.

1948 Odell Lake Site: a new Paleo-Indian campsite in Oregon. American Antiquity, Vol. 14, No. 1, pp. 57-60.

Department of Agronomy, Cornell University

1986 Designations for master horizons and layers in soils. Produced for Soil Management Support Services under the auspices of the United States Department of Agriculture and the Agency for International Development.

Franklin, Jerry F., and C.T. Dyeness

1973 Natural vegetation of Oregon and Washington. U.S.D.A. Forest Service General Technical Report PNW-8.

Henn, Winfield

1975 The Indian Ridge Site, Lane County, Oregon. In Archaeological Studies in the Willamette Valley, Oregon edited by C. Melvin Aikens. University of Oregon Anthropological Papers 8:455-468.

Jenkins, Paul Christy and Thomas E. Churchill
1983 An archaeological evaluation of the New Brave site. Report to the Willamette National Forestry by Coastal Magnetic Search and Survey.

Maser, Chris, Bruce R. Mate, Jerry F. Franklin and C. T. Dyeness
1981 Natural history of Oregon coast mammals. U.S.D.A. Forest Service General Technical Report PNW-133.

Minor, Rick and Kathryn Anne Toepel
1980 A preliminary report on the Halverson site (35LA262): a seasonal campsite in the upper Willamette Valley, Oregon. Paper presented at the 33rd annual Northwest Anthropological Conference.

Minor, Rick and Kathryn Anne Toepel
1981 Archaeological overview. In Prehistory and history of BLM lands in west-central Oregon: a cultural resource overview. University of Oregon Anthropological Papers 25:117-183.

Minor, Rick and Kathryn Anne Toepel
1982 An archaeological evaluation of the Tidbits site (35LIN100), Linn County, Oregon. Heritage Research Associates Report 14.

Minor, Rick and Kathryn Anne Toepel
1984 The Blitz site: An early-middle archaic campsite in the Cascades of western Oregon. Heritage Research Associates Report No. 34.

Newman, Thomas M.
1966 Cascadia Cave. Occasional Papers of the Idaho State University Museum 18.

Olsen, Thomas L.
1975 Baby Rock Shelter. In Archaeological Studies in the Willamette Valley, Oregon, edited by C. Melvin Aikens. University of Oregon Anthropological Papers 8:469-494.

Southard, Michael D.
1986a An archaeological evaluation of the Mill Creek No. 6 site (35LA365), Lane County, Oregon. Report on file with the Bureau of Land Management, Eugene District Office.

1986b An archaeological evaluation of the Cornucopia Site (35LA751), Lane County, Oregon. Report on file with the Bureau of Land Management, Eugene District Office.

Toepel, Kathryn Anne and Stephen Dow Beckham
1981 Ethnographic overview. In Prehistory and history of BLM lands in west-central Oregon: a cultural resource overview. University of Oregon Anthropological Papers 25:41-115.

White, John R.

1975 A proposed typology of Willamette Valley Sites. In Archaeological Studies in the Willamette Valley, Oregon, edited by C. Melvin Aikens. University of Oregon Anthropological Papers 8:17-140.

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An Archaeological Evaluation of the Crack Shot Site (35LA848) Lane County, Oregon

Michael D. Southard
District Archaeologist

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Eugene District

February, 1989

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1987b The Narrows Site: A Middle and Late Archaic Fishery in the Umpqua River Basin. Paper presented at the Third Annual Oregon Archaeology Conference sponsored by the Association of Oregon Archaeologists, November 6-7, 1987. Ashland, Oregon.

1988 Archaeological Evaluation of the Shivigny East Site (35DO397): A Ridge Crest Hunting Camp in the Upper Umpqua Basin, Douglas County, Oregon. Report on file at the Roseburg District Bureau of Land Management, Roseburg, Oregon.

O'Neill, Brian and Isaac Barner

1987 Martin Creek and the Narrows: Late Archaic Occupations in the Umpqua Basin. Paper presented at the 11th Annual State of Jefferson Meeting on Archaeology and History, March 5-6, 1987. Ashland, Oregon.

Riddle, George W.

1968 History of Early Days in Oregon. Reprinted from the Riddle Enterprise as a facsimile reproduction, The Shorey Book Store, Seattle, Washington.

Schreindorfer, Crystal S.

1985 Marial: 1984, Archaeological Investigations at 35CU84. Report to the Bureau of Land Management, Medford District by the Department of Anthropology, Oregon State University, Corvallis.

Simmons, Alexy

1985 Ethnography and History. In Archaeological and Geoarchaeological Investigations at the Sylmon Valley School Site (35DO275) Southwestern Oregon, R.L. Lyman (ed), pp. 3.1-3.18. Prepared for the Roseburg Sanitary Authority, Roseburg, Oregon by the Department of Anthropology, Oregon State University, Corvallis.

Skinner, Craig E.

1983 Obsidian Studies in Oregon. Unpublished MA thesis, Department of Interdisciplinary Studies, University of Oregon, Eugene.

Sullivan, Alan P. III and Kenneth C. Rozen

1985 Debitage Analysis and Archaeological Interpretation. American Antiquity 50:4:755-779.

Wert, S.R., J.A. Pomerening, T.S. Gibson, and B.R. Thomas

1977 Soil Inventory of the Roseburg District. Bureau of Land Management, Roseburg District, Roseburg, Oregon.

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Archaeological Evaluation of the Swiftwater Site (35DO359), Douglas County, Oregon

Report to the
Roseburg District
Bureau of Land Management
Roseburg, Oregon

by

Brian L. O'Neill

September, 1990

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ABSTRACT

This report presents the results of archaeological investigations conducted at the Swiftwater Site (35DO359) by INFOTEC Research Inc. during September 1989. The site is situated on an alluvial terrace located in the narrow canyon of the North Umpqua River approximately one mile east of Idleyld, Oregon. A series of auger probes and test pits was placed in the vicinity of a planned parking lot to be located at the North Umpqua Trail head. The materials recovered were very sparse and artifact diversity limited to cobble tools and a projectile point fragment. Site location and proximity to an aboriginal fishery suggest that the site served as a seasonal fishing camp.

INTRODUCTION

The Swiftwater site (35DO359) is located in the SE 1/4, SW 1/4, Section 1, T26S, R3W, Willamette Meridian, on land administered by the Roseburg District, Bureau of Land Management. Originally reported in 1981 by David Corliss, former Roseburg District BLM archaeologist (Corliss 1981), the initial description was based upon test excavations, consisting of 15 test pits, placed on the broad river-side terrace opposite the confluence of Rock Creek and the North Umpqua River. Discovered in ten of these pits, to a depth of approximately one meter, were cobble tools and flakes of obsidian and cryptocrystalline silicate. Results suggested the possibility of a small village at this location (Corliss 1981).

The site is located on the south bank of the North Umpqua River approximately 1 mile upstream from the small community of Idleyld Park, at an elevation of 800 feet above mean sea level (Figure 10.1). It is situated on a broad alluvial terrace with a steep bank fronting the river. The river is today heavily used by fishermen and, in the past, an aboriginal fishery was located in the general area (cf. O'Neill 1989).

Roseburg District BLM proposed constructing a parking lot in the southwest portion of the terrace upon which the Swiftwater site is found. In order to assess the impact that construction activities would have upon the cultural resources of the site, a subsurface evaluation was conducted. Archaeological investigations in the vicinity of the proposed parking lot were undertaken between September 5 and 8, 1989, by a field crew from INFOTEC Research, Inc. (IRI) of Eugene, as part of their general services contract with the Bureau of Land Management. The field work was directed by Dr. Eric Gibson; field crew included David Coupe, Anthony Keith, Debra Sandler, and David Weatherby. Also participating in the excavation were Dr. Richard Pettigrew, IRI program manager, and Isaac Barner, Roseburg District archaeologist.

The 1989 Swiftwater site evaluation included the excavation of 22 auger probes and five test pits. Test excavations in the vicinity of the proposed parking lot discovered cultural material in low density. This consisted of fire-cracked rock, cobble tools, and debitage dominated by basalt flakes. A test pit placed closer to the edge of the river terrace, and presumably in the vicinity of Corliss' 1981 test excavations, yielded denser cultural deposits including cobble choppers and flakes of obsidian and CCS.

The following is a report of the 1989 IRI Swiftwater site evaluation. Included in this report is a brief description of the environmental and cultural setting, followed by a description of excavations and analysis of recovered cultural material. Liberal use is made of the field notes and preliminary report compiled by IRI following their field work (Gibson and Pettigrew 1989). Artifact illustrations accompanying this report were drawn by Kevin McCornack. The field notes, photographs, and collected materials are curated in Eugene at the Oregon State Museum of Anthropology, University of Oregon, under accession number 741.

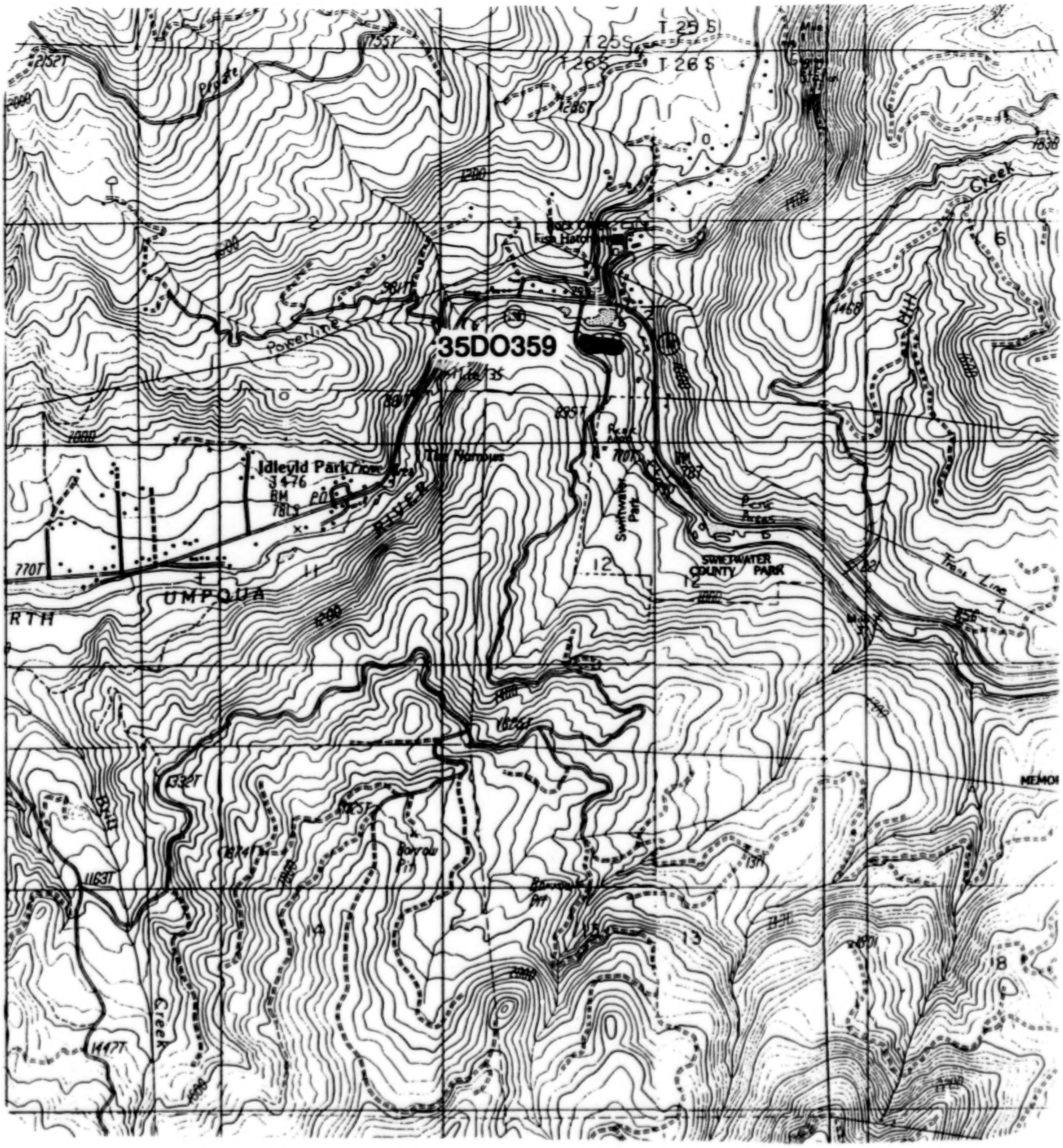


Figure 10.1. Location of the Swiftwater site (35DO359) adjacent to the North Umpqua River in Douglas County, Oregon (USGS Glide 7.5' Quad, 1987 and Old Fairview 7.5' Quad 1989).

ENVIRONMENTAL BACKGROUND

The North Umpqua River has its origin approximately 6,000 feet above sea level in the Western Cascades of the Upper Umpqua Basin. The Swiftwater site (35DO359) is located in the narrow canyon of the North Umpqua a short distance east of where the river valley suddenly broadens in the Middle Umpqua Basin.

The Swiftwater site lies within the Western Cascades physiographic province, containing topography generally characterized as "rugged" (Franklin and Dyrness 1973). Past volcanic activity is reflected in the underlying geology; Eo-Oligocene flows and tuffs are, to the east, overlain by more recent Plio-Pleistocene flows and tuffs (Baldwin 1981:70). Recent volcanism--the catastrophic eruption of Mt. Mazama some 6600 years ago--contributed additional ejecta in the form of ash and pumice (Purdom 1963) which is today found in archaeological sites in the upper and middle Umpqua basin (cf. Snyder 1981; Jenkins and Churchill 1989).

Soils found at the Swiftwater site are classified as Crater Lake Variant. This soil type "forms in alluvium from ash" and characteristically "occurs on stream terraces at elevations of 500 to 1000 feet" (USDA 1980).

The gravel bars of the North Umpqua River contain cobbles of basalt, andesite, and cryptocrystalline silicates (CCS) which include jasper, chalcedony, and chert. Locations where Indians quarried CCS have been recorded in the mountainous uplands of the Umpqua Basin. Obsidian; however, is a non-local lithic raw material used for the manufacture of chipped stone tools (cf. Skinner 1983). Hand-carried into the basin, the geochemical sourcing of this material indicates that the Native Americans of the Umpqua Basin participated in an extensive extra-basin trade network stretching as far south as northern California's Medicine Lake Highland (cf. Jenkins and Churchill 1989; Winthrop 1989).

The climate of the Umpqua Basin, like that of much of western Oregon, is characterized by mild, wet winters and hot, dry summers. Average temperatures recorded at Roseburg are 40^o F in January and 68^o F in July, with extremes of minus 1^o F in January and 106^o F in July. Reflecting the rain-shadow effect of the Coast and Cascade mountain ranges, the average annual precipitation varies from 40 to 60 inches and falls mainly as winter and spring rain. Snow is infrequent at lower elevations but accounts for much of the higher elevation winter precipitation (Franklin and Dyrness 1973; Wert et al. 1977).

The upper North Umpqua drainage lies at the southern extent of the Tsuga heterophylla vegetation zone (Franklin and Dyrness 1973:45; 70-88). The vegetation in the vicinity of site includes Douglas-fir, grand fir, western redcedar, yew, chinquapin, vine maple, dogwood, hazel, and huckleberry. Ground cover includes salal, trailing blackberry, and swordfern.

Wildlife inhabiting the basin includes Roosevelt elk, black-tailed and white-tailed deer, black bear, mountain lion, river otter, beaver, marten, muskrat, raccoon, porcupine, and rabbit. Avian species include California and mountain quail, blue and ruffed grouse, mourning dove, wood duck, bald eagle, and pileated woodpecker (Lauman et al. 1972).

The Umpqua River is a very productive west-coast fishery (Netboy 1974:323-333). Ethnographic and archaeological evidence suggest the exploitation of the rich anadromous resources by the Indian inhabitants of the basin. The North Umpqua River supports runs of chinook and coho salmon and steelhead (anadromous rainbow trout). Other resident species include rainbow and cutthroat trout, lamprey, sucker, and Umpqua squawfish (Lauman et al. 1972).

ARCHAEOLOGICAL AND ETHNOGRAPHIC BACKGROUND

Occupation of the Umpqua Basin appears to have been as early as any in Western Oregon. Fluted points, dated elsewhere in North America to as old as 11,500 years ago and associated with hunters of extinct Rancholabrean megafauna, have been discovered along the North Umpqua River by a local collector (Hanes 1976; Minor 1985). Radiocarbon-dated sites in western Oregon, while not containing diagnostic evidence of Paleoindian occupation, do help confirm the likelihood of materials of such antiquity. Archaeological sites on the floodplain of the Long Tom River in the upper Willamette Valley have yielded dates over 9,000 years old (Freidel et al. 1989). To the south, in the Rogue Basin, excavations at the Marial site have discovered an occupation dating approximately 8,500 years ago (Schreindorfer 1985).

Archaeological investigations at the Narrows site, located less than a mile downstream from the Swiftwater site, have yielded the oldest radiometric evidence of human occupation of the basin. Situated at the site of an aboriginal fishery, the oldest component is dated to 6270 BP and contains choppers, a hammerstone, utilized flakes, an endscraper, and a biface fragment. The two projectile points recovered from this component include an asymmetrical broad-stemmed specimen and a convex-base foliate specimen. Three additional components were identified and represent portions of the Middle and Late Archaic periods. Artifacts recovered include a variety of broad- and narrow-necked projectile points, knives, scrapers, stone bowl and hopper mortars, cobble tools, bone tools, and a baked clay figurine fragment. The recent component at the Narrows site, dominated by barbed and tanged projectile points, provides the type site for the Narrows Phase, proposed as a Late Archaic phase of the Middle Umpqua Basin and apparently associated with the recent occupation of the region by the Athapascan Upper Umpqua (O'Neill 1989).

Middle Archaic age components in the Umpqua Basin typically contain broad-necked projectile points and lanceolate or foliate-shaped varieties (Churchill 1986; Minor and Connolly 1987; Minor 1987). Artifact assemblages from Late Archaic age components typically contain small side-notched points and narrow-necked points which may be barbed or tanged (cf. Baxter 1987; O'Neill 1989). Two Late Archaic Period burials have been excavated. Both were found to have been tightly flexed and placed in prepared basin-shaped pits (O'Neill 1987; Hemphill 1989). One of these burials was accompanied by a broken, spatulate-shaped ground slate club (O'Neill 1987).

In addition to the reported work at the Narrows site, other archaeological investigations in the vicinity of the Swiftwater site are: the 1930s investigation along Rock Creek (Stafford and Voget 1936), Glide Ranger Station site (Barner 1979; Churchill and Jenkins 1985), and Gatchel site excavations (Ottis and West 1984).

The Umpqua Basin was occupied at the time of Euroamerican contact by at least five aboriginal groups, distinguished one from the other by language and customs (Beckham 1986). These included a) the Lower Umpqua or Kuitsch, b) the Upper Umpqua, c) the Yoncalla, d) the Takelma, and e) the Molala. Of these, the Upper Umpqua and Molala occupied areas adjacent to the Swiftwater site.

The Athapascan Upper Umpqua inhabited a large portion of the basin including the area around the Swiftwater site on the North Umpqua River. The Upper Umpqua Indians shared a common language and culture with other Athapascan speakers occupying a crescent-shaped area which includes coastal drainages south to the Smith River region of northern California. Linguistic evidence suggests that Athapascan speakers migrated from their western subarctic homeland to the southwest Pacific Coast at approximately AD 900 (Hoijer 1956, 1960). Archaeological evidence also suggests a recent arrival in the Umpqua Basin (O'Neill 1989). While regional variations in dialect were distinguished, there were only minor differences in subsistence pursuits, material culture and ceremony among these Pacific Athapascan groups (Drucker 1937:285).

Inhabiting the mountainous uplands of the upper North Umpqua drainage east of the Swiftwater site were the Molala (Beckham 1986). Little is known of this group. Jesse Applegate, an early Douglas County settler, described the Molala as residing in the mountains, though also possibly in the vicinity of the Swiftwater site (Applegate 1907). A recent synthesis of ethnographic and linguistic data pertaining to the Molala has been compiled and is useful in providing archaeological investigations in the Western and High Cascades with an ethnographic model against which archaeological data may be compared (Toepel 1987). Archaeological investigations in the Steamboat Creek vicinity of the North Umpqua drainage have recently proposed that there was a close relationship between groups of Athapascan Upper Umpqua and Molala involving trade, intermarriage, and seasonal co-residence (Baxter 1989).

The Indians of southwest Oregon lived in politically and economically autonomous villages comprised largely of patrilineally related kin. There was no formal political organization above the village level, although alliances between groups could be formed and strengthened by the purchase of brides from neighboring groups (Drucker 1937). Within these villages a "big man" helped direct affairs and settle disputes. His position was achieved through the strength of his personality as well as the possession and strategic redistribution of wealth. George Riddle, who spent much of his boyhood among the Indians of southern Douglas County, describes the influential members of the bands he lived among and the method by which conflicts were resolved (Riddle 1968).

The settlement-subsistence regime of southwest Oregon Indians entailed the movement of people to locations of seasonally occurring abundant resources. Such resources included camas, tarweed, acorns, berries and fish (cf. Hanes 1977; Simmons 1985). Winter villages, located adjacent to major stream courses where the distribution of major resources co-occur during the fall months, were probably occupied year-round by some segment of the patrilineal band (Hanes 1977) and served as storage areas for winter supplies. During the warmer months of the year small groups would occupy temporary base camps, from which a wide variety of resources would be gathered and processed. The winter villages would be fully occupied during the colder months.

A variety of aboriginal fishing techniques are described by the early explorers (Douglas 1959) and settlers of the Umpqua Basin (e.g. Riddle 1968). Included among these techniques are: weirs, traps, spears, and gaffs. Archaeological evidence suggests that netting (Ross and Snyder 1986; Lyman 1985) and angling (Minor 1983) may have been undertaken. It is quite likely that the Swiftwater site vicinity served as an aboriginal fishery in much the same fashion as the Narrows site less than a mile downstream (O'Neill 1989).

PROCEDURE AND RESULTS

Subsurface evaluation of the Swiftwater site was conducted by an INFOTEC Research (IRI) field crew between September 5 and 8, 1989 (Gibson and Pettigrew 1989). Investigations focussed upon an approximately 1900 m^2 area adjacent to and east of the paved road crossing Swiftwater Bridge (Figure 10.2). Limited testing by former BLM archaeologist David Corliss (1981) yielded cultural debris on this terrace opposite the confluence of Rock Creek and the North Umpqua River. Surface indications of a prehistoric site are sparse, and IRI investigations collected only two objects from the surface--an obsidian flake and a hammerstone.

IRI investigations included the excavation of 22 auger probes (AH) and five test pits (TP). Two test pits (TPs 1 and 2) measured 1x2 meters and three measured 1x1 meter (TPs 3, 4, and 5). The auger probes were excavated in 20 cm levels and the test pits in 10 cm levels. Care was taken to distinguish and record changes in soil strata in the field. All fill was screened through hardware cloth: 1/8 inch mesh used for TP2 and AHs 2, 4, 10 and 12, with the remaining units screened through 1/4 inch mesh. Recovered artifacts and samples of charcoal were placed in bags labeled with probe or test pit number and level number. Fire-cracked rock was counted and discarded. Approximately 10.5 m^3 were excavated and sifted during the test excavations at 35DO359.

Stratigraphy

Test excavations at the Swiftwater site revealed that soils on the terrace are at least 260 cm deep and are consistent with the Crater Lake Variant designation (USDA 1980). The soils may be separated into five strata which included the following:

Stratum 1 is a reddish-brown silt (7.5YR3/4 to 10YR5/4) found from the surface to a depth of approximately 80 cm. Some sand is present at the bottom of the stratum.

Stratum 2, found between 80 cm and 140 cm below the surface, is a loosely compacted yellow-brown to olive-brown sand (2.5Y4/4) containing subangular pebbles and some pumice.

Stratum 3 is a distinct layer of salt-and-pepper sand (10YR3/4) containing volcanic ash variably found between 100 to 160 cm.

Stratum 4, found between 160 and 200 cm below the surface, is a light brown sandy silt (2.5Y6/6) containing much reworked (rounded) ash and pumice. Pieces of charcoal were noted as occurring within these deposits.

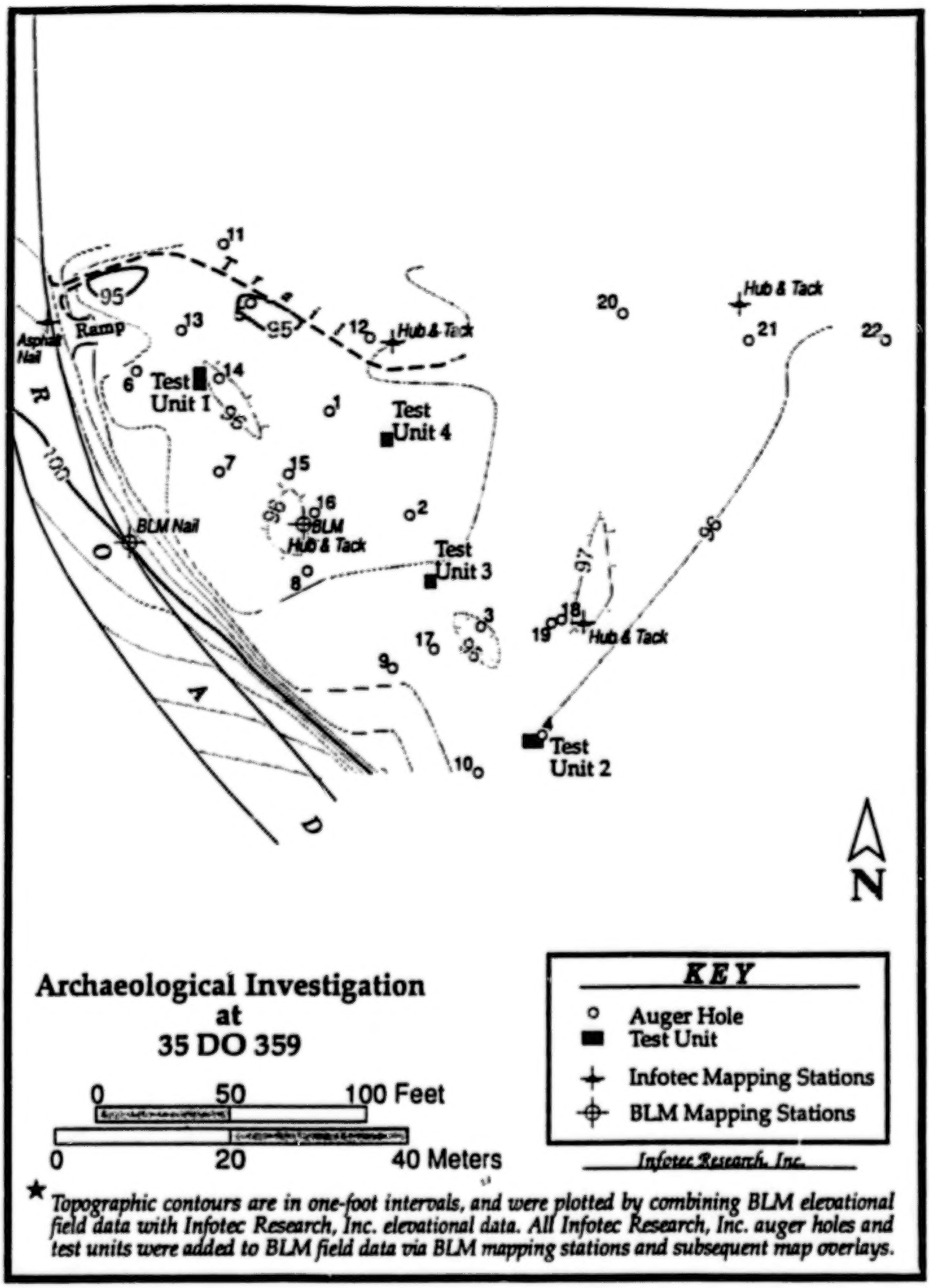
Stratum 5, found between 200 and 260 cm below the surface, is a compact reddish-brown clayey silt (10YR4/3).

Table 10.1. Counts of cultural material and presence of fire-cracked rock (*) in auger probes at Swiftwater site.

20 cm Levels	Auger Probe Number 1	2	3	4	5	6	7	8	9	0	11	12	13	14	15	16	17	18	19	20	21	22
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
2	-	-	•	-	•	1	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	•	-	-	-	-	-	-	-	-	-	-	-	-	-	-	•	-	1	-
4	-	-	-	-	-	-	-	-	-	1	-	-	•	-	-	•	-	///	•	•	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	///	-	-	—	
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	///	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	///	-	-	-	-
8	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	///	-	-	-	-
9	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	///	-	///	///	///
10	-	-	///	-	-	-	-	-	-	-	-	-	-	-	-	-	-	///	-	///	///	///
11	///	-	///	-	-	-	-	-	-	-	-	-	-	-	-	-	-	///	-	///	///	///
12	///	-	///	-	-	-	-	-	-	-	-	-	-	///	-	-	-	///	-	///	///	///
13	///	///	///	-	-	-	-	-	-	///	///	///	///	///	///	///	///	///	///	///	///	///
14	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///

- = excavated level
/// = unexcavated
• = fire-cracked rock
n = cultural material

Reworked volcanic ash and pumice has been discovered elsewhere along the North Umpqua drainage in archaeological contexts (cf. Barner 1979; Jenkins and Churchill 1989) and it is assumed that the origin of the Stratum 4 volcanic material was the eruption of Mt. Mazama some 6800 years ago (Purdom 1964). Recent investigations in the Dry Creek vicinity discovered archaeological materials within a paleosol below a blanket of reworked ash and pumice, and associated with a radiocarbon date of 5220 ± 80 BP (Jenkins and Churchill 1989).



Archaeological Investigation at 35 DO 359

★ *Topographic contours are in one-foot intervals, and were plotted by combining BLM elevational field data with Infotec Research, Inc. elevational data. All Infotec Research, Inc. auger holes and test units were added to BLM field data via BLM mapping stations and subsequent map overlays.*

Figure 10.2. Location of auger probes and test pits at the Swiftwater site. Test Pit 5 is located approximately 48 meters east of auger probe 22.

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Excavation

Nineteen auger probes, spaced at approximately ten meter intervals in three rows 10 to 15 meters apart, were excavated in the vicinity of the proposed parking lot at the Swiftwater site (Figure 10.2). Three additional probes were placed to the north of this grid in order to investigate the edge of the terrace closer to the river. The average depth of the auger probes was approximately 220 cm, with a maximum depth of 260 cm; the three auger probes to the north of the planned Swiftwater parking lot were excavated to 160 cm below the surface. Widely scattered cultural material--consisting of lithic debitage, a projectile point fragment, cobble tools and fire-cracked rock--was discovered to a maximum depth of 180 cm, though it was generally concentrated in the upper 80 cm (Table 10.1).

Table 10.2. Debitage and tool counts, by material, in TP1 (1x2) at 35DO359.

10 cm	DEBITAGE			TOOLS				DENSITY-
Level	OBS	CCS	BAS	OBS	CCS	BAS	TOTAL	ITEMS/M^3
1	1	0	1	0	0	0	2	10
2	0	0	0	0	0	0	0	0
3	0	0	1	0	0	0	1	5
4	0	0	1	0	0	0	1	5
5	0	0	1	0	0	0	1	5
6	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0
13	0	0	0	00		0	0	0
14	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0
Total	1	0	4	0	0	0	5	

In order to assess the results of the auger probe investigations, four test pits were excavated in the project area. A fifth test pit was placed to the northeast of the project area in order to evaluate the original test excavations conducted at the Swiftwater site (Corliss 1981).

TP1, a 1x2 meter unit, was placed between AHs 6 and 7. Excavated as two 1x1 units (A and B) in order to maintain greater horizontal control, TP1-A reached a depth of 150 cm and TP1-B reached a depth of 110 cm. The cultural material recovered from this test pit (Table 10.2) includes five pieces of debitage found in the upper 50 cm of Stratum 1. Fire-cracked rock, associated with charcoal, was greatest in the upper 40 cm.

TP2, a 1x2 meter unit, was placed along the southeast edge of the grid where a CCS projectile point fragment

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had been discovered between 160-180 cm below the surface in AH4. Fire-cracked rock had also been discovered in AH4 between 40-60 cm. As with TP1, TP2 was excavated as two 1x1 units labeled "A" and "B", each reaching a depth of 200 cm. The cultural material recovered from TP2 included 17 basalt waste flakes and two basalt choppers (Table 10.3). The vertical distribution of this material was limited to the upper 80 cm, with the greatest density occuring in the Stratum 1 reddish-brown silt between 30-50 cm. A similar pattern was observed with the distribution of fire-cracked rock in this unit. The charcoal discovered during the excavation of TP2 is believed to have come from a large root found in a corner of the test unit. Investigation of the strata 3 and 4 soils between 160 and 180 cm failed to discover any cultural material that might be associated with the projectile point fragment discovered in AH4.

TP3, a 1x1 meter unit, was placed between AHs 2 and 3 along the northeast edge of the grid and reached a depth of 50 cm. The cultural material recovered from this unit (Table 10.4) consists of 3 basalt flakes, all recovered within the reddish-brown Stratum 1 silt. Small quantities of charcoal and fire-cracked rock were observed.

TP4, a 1x1 meter unit, was placed between AHs 1 and 2, and excavated to a depth of 50 cm. The cultural material recovered from this unit (Table 10.5) includes one basalt flake and three basalt choppers. All of this material was discovered between 20 and 40 cm below the surface. Charcoal and fire-cracked rock were infrequent in TP4.

TP5, a 1x1 meter unit, was placed closer to the river and nearly 48 meters east of AH22 in order to examine the subsurface deposits in the vicinity of the original test excavations at the Swiftwater site. TP5, excavated to a depth of 50 cm, contained the densest and most diverse cultural deposits discovered during the 1989 IRI investigations at the Swiftwater site. The cultural material recovered from this unit (Table 10.6) includes 54 pieces of lithic debitage--12 obsidian, 12 CCS, and 30 basalt--and two basalt choppers. Charcoal and fire-cracked rock were densest between 20-40 cm, and charcoal samples were collected from each of levels 2, 3, and 4. An auger probe was excavated in the floor of TP5, from 50 to 130 cm, in order to investigate the deposits below the cultural layer. No cultural material was recovered from this auger probe.

An examination of the vertical distribution of cultural material--including formed tools, debitage, and fire-cracked rock--recovered during the test excavations at the Swiftwater site suggests a single component located in Stratum 1. While fire-cracked rock and cobble tools are ubiquitous at this site, flaked stone tools and debitage of CCS and obsidian are noticeably lacking--except in the TP5 deposits where densities as great as 210 items/m^3 contain obsidian and CCS debitage.

Artifact Analysis

Fifteen tools and 85 pieces of lithic debitage were recovered from the test excavations conducted at the Swiftwater site. Artifact class variability is limited and includes a projectile point fragment and cobble tools--choppers, hammerstones, and battered or split cobbles. A description of the artifacts is presented below, as is an analysis of the debitage. Artifacts are labeled according to provenience; test pit (TP) or auger hole (AH) number followed by level and specimen number. Four surface finds have been designated as S-1 through S-4. Each artifact also bears site number 35DO359 and Accession Number 741 of the Oregon State Museum of Anthropology.

Table 10.3. Debitage and tool counts, by material, in TP2 (1x2) at 35DO359.

10 cm	DEBITAGE			TOOLS				DENSITY-
Level	OBS	CCS	BAS	OBS	CCS	BAS	TOTAL	ITEMS/M^3
1	0	0	0	0	0	0	0	0
2	0	0	1	0	0	0	1	5
3	0	0	2	0	0	1	3	15
4	0	0	5	0	0	1	6	30
5	0	0	5	0	0	0	5	25
6	0	0	1	0	0	0	1	5
7	0	0	2	0	0	0	2	10
8	0	0	1	0	0	0	1	5
9	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0
Total	0	0	17	0	0	2	19	

Table 10.4. Debitage and tool counts, by material, in TP3 (1x1) at 35DO359.

10 cm	DEBITAGE			TOOLS				DENSITY-
Level	OBS	CCS	BAS	OBS	CCS	BAS	TOTAL	ITEMS/M^3
1	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0
3	0	0	2	0	0	0	2	20
4	0	0	0	0	0	0	0	0
5	0	0	1	0	0	0	1	10
Total	0	0	3	0	0	0	3	

Table 10.5. Debitage and tool counts, by material, in TP4 (1x1) at 35DO359.

10 cm	DEBITAGE			TOOLS			DENSITY-	
Level	OBS	CCS	BAS	OBS	CCS	BAS	TOTAL	ITEMS/M^3
1	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0
3	0	0	1	0	0	2	3	30
4	0	0	0	0	0	1	1	10
5	0	0	0	0	0	0	0	0
Total	0	0	1	0	0	3	4	

Table 10.6. Debitage and tool counts, by material, in TP5 (1x1) at 35DO359.

10 cm	DEBITAGE			TOOLS			DENSITY-	
Level	OBS	CCS	BAS	OBS	CCS	BAS	TOTAL	ITEMS/M^3
1	3	4	2	0	0	1	10	100
2	5	6	9	0	0	1	21	210
3	2	1	6	0	0	0	9	90
4	2	1	7	0	0	0	10	100
5	0	0	6	0	0	0	6	60
Total	12	12	30	0	0	2	56	

Projectile Point (N=1)

One fragmentary projectile point was recovered. Measuring 26.7 in length x 19 in width x 6.7 mm in thickness, this CCS specimen (AH4/9-1) represents the distal end of a broad-bladed projectile point (Figure 10.3, a). The proximal (hafting) end of the point is missing, thus limiting its diagnostic usefulness.

Cobble Tools

Fourteen modified cobbles were recovered during investigations at the Swiftwater site (Table 10.7). These have been morphologically separated into three classes: choppers, hammerstones, and battered/split cobbles.

Choppers are cobbles with a unifacially flaked edge that shows some sign of use, usually crushing (Figure 10.3, b - e). This was the most common artifact class collected at the Swiftwater site, with ten specimens recovered. Three choppers (S-2, S-3 and S-4) were collected during construction of the parking lot.

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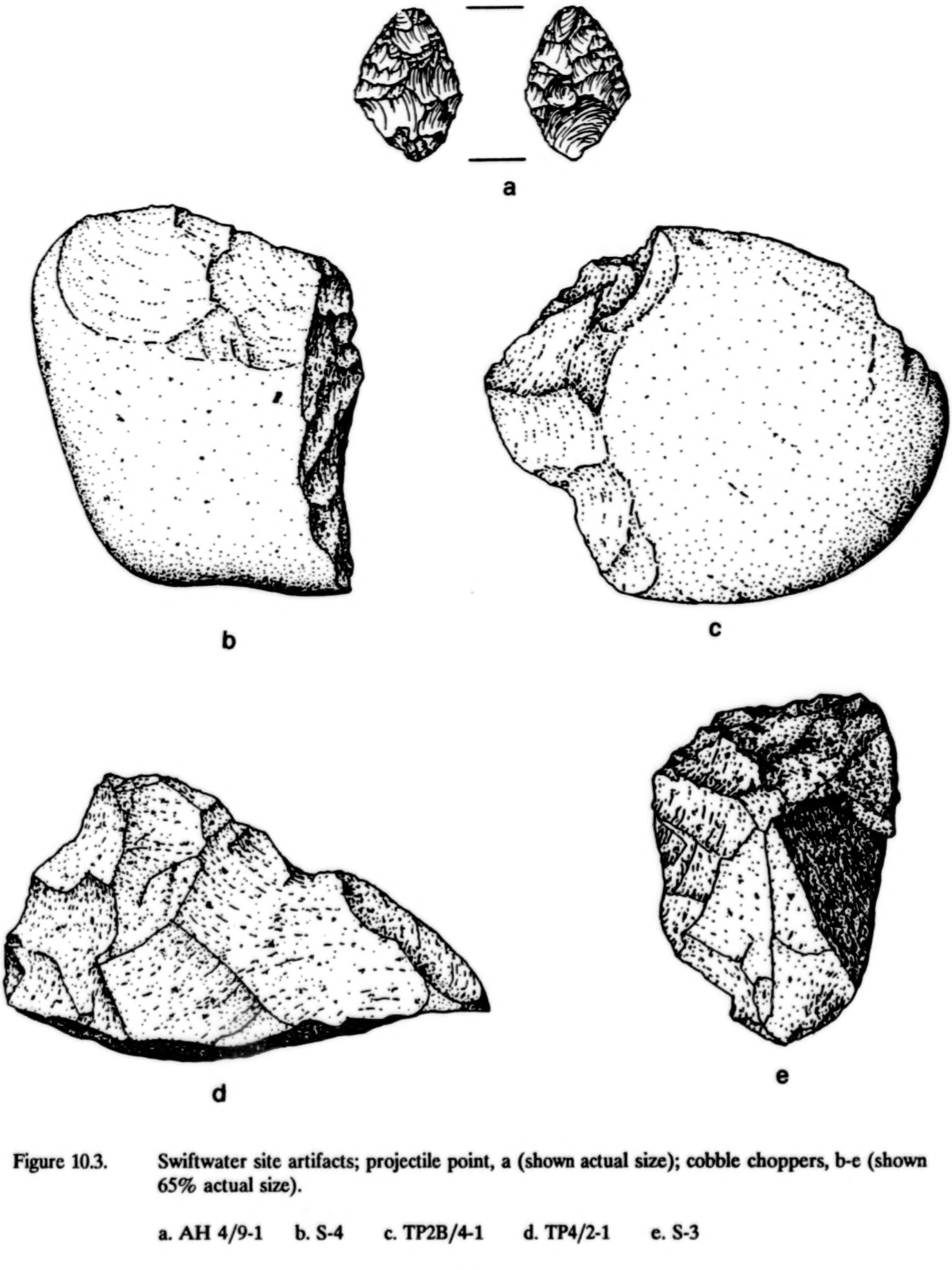

Figure 10.3. Swiftwater site artifacts; projectile point, a (shown actual size); cobble choppers, b-e (shown 65% actual size).

a. AH 4/9-1 b. S-4 c. TP2B/4-1 d. TP4/2-1 e. S-3

Table 10.7. Swiftwater site (35DO359) cobble tool data.

Artifact Number	Raw Mat'l	Max Lngth	Max Wdth	Max Thkns	Chopper	Hammer	Battered/ Split Cobbles
S-1	BAS	162	89	58		X	
S-2	BAS	126	78	56	X		
S-3	BAS	95	66	40	X		
S-4	BAS	131	104	53	X		
AH6/2-1	BAS	98	76	53			X
AH7/2-1	BAS	72	55	23		X	
AH15/1-1	BAS	97	75	48			X
TP2B/3-1	BAS	86	70	56	X		
TP2B/4-1	BAS	124	101	42	X		
TP4/2-1	BAS	142	73	57	X		
TP4/2-2	BAS	64	44	33	X		
TP4/3-1	BAS	87	52	41	X		
TP5/1-1	BAS	93	63	47	X		
TP5/2-1	BAS	123	82	70	X		

Measurements in millimeters

The two hammerstones collected at the Swiftwater site are basalt cobbles that show evidence of pecking abrasions at each end.

Two basalt cobbles were collected from the cultural deposits at the Swiftwater site. Both show signs of having been broken by striking rather than heat fracture. These have been included in the artifact assemblage, though their function remains unclear. It is possible that they were used as expedient pounding tools, were broken early in their use-life, and discarded.

Lithic Debitage

Each of the 85 pieces of debitage collected from the Swiftwater site was categorized according to its a) material type, b) reduction stage, c) completeness, and d) size. This scheme is a modification of the one proposed by Sullivan and Rozen (1985) and is used by others conducting research in the North Umpqua drainage (cf. Baxter 1987, 1989; O'Neill 1988, 1989).

Three types of raw material are represented in the lithic debitage at 35DO359 (Table 10.8). In order of frequency these include basalt (67.1%, n=57), obsidian (17.6%, n=15), and CCS (15.3%, n=13). The relative proportions of materials differ strikingly from those observed at the nearby Narrows site, where basalt comprised a modest 28.6% of the debitage assemblage, CCS was the most common material at 62.7%, and obsidian the least common at 8.5% of the assemblage (O'Neill 1989:81).

Table 10.8. Raw material frequency of lithic debitage at Swiftwater site.

Obsidian		CCS		Basalt		
N	%	N	%	N	%	TOTAL
15	17.6%	13	15.3%	57	67.1%	85

Table 10.9. Reduction stage of lithic debitage by raw material at the Swiftwater site.

	Primary		Secondary		Interior		Debris		
	N	%	N	%	N	%	N	%	TOTAL
Obsidian	0	0.0%	0	0.0%	15	100.0%	0	0.0%	15
CCS	0	0.0%	0	0.0%	7	53.8%	6	46.2%	13
Basalt	7	12.3%	24	42.1%	11	19.3%	15	26.3%	57
Total	7	8.2%	24	28.3%	33	38.8%	11	12.9%	85

CCS and basalt occur commonly in the region, and quarries of CCS have been discovered in the mountainous uplands. Obsidian, on the other hand, was hand-carried into the North Umpqua drainage from sources outside the basin. Obsidian sourcing of specimens collected from archaeological sites in the upper North Umpqua drainage (cf. S. Berryman 1987; J. Berryman 1987; Jenkins 1988; Jenkins and Churchill 1989; Winthrop 1989) have been characterized as deriving from sources in the upper Klamath Basin (Silver Lake/Sycan Marsh and Spodue Mountain), the Fort Rock Basin (Cougar Mountain, Quartz Mountain, Newberry Crater), and central Cascades (Obsidian Cliffs). It has been suggested that more northerly sources--Obsidian Cliffs and Newberry Crater--were exploited during recent times (Jenkins and Churchill 1989).

At the Swiftwater site, the predominence of basalt debitage is consistent with the presence of large numbers of basalt tools.

The debitage was separated into four lithic reduction stage categories (Table 10.9). These include the following:

a) primary flakes are those with cortex covering the entire dorsal surface;
b) secondary flakes contain cortex on a portion of the dorsal surface;
c) interior flakes are free of cortex; and
d) debris, also referred to as "angular waste," does not share the morphological characteristics of flakes--i.e. striking platform, bulb of percussion, etc.

Table 10.10. Summary of lithic debitage by presence or absence of striking platform.

	Platform						
	Present		Absent		Debris		
	N	%	N	%	N	%	Total
Obsidian	13	86.7%	2	13.3%	0	0.0%	15
CCS	2	15.4%	5	38.5%	6	46.2%	13
Basalt	27	47.4%	15	26.3%	15	26.3%	57
Total	42	49.4%	22	25.9%	21	24.7%	85

Each of the three raw material classes shows a different pattern of use. All of the obsidian specimens are interior flakes, suggesting its use in the manufacturing and refurbishing of flaked stone tools. The CCS debitage is almost evenly divided into interior flakes and debris, suggesting that both initial core reduction and the manufacturing of chipped stone tools occured on site. The basalt debitage shows the greatest variety: 54.4% cortical flakes, 19.3% interior flakes, and 26.3% debris. The manufacture of basalt cobble choppers, as are found at the Swiftwater site, would account for the large proportion of cortical flakes--rather than the alternative explanation of basalt core reduction for the production of smaller basalt chipped stone tools.

Individual flakes were examined for the presence or absence of striking platform (Table 10.10). In the Sullivan and Rozen scheme (1985) it is thought that tool manufacture is represented by the presence of large numbers of flake fragments and broken flakes; core reduction is indicated by large numbers of complete flakes and debris. The obsidian debitage at the Swiftwater site would appear to represent the refurbishing and manufacture of tools of that material. The proportions of basalt debris and platform flakes would suggest core reduction were it not for the large number of choppers, the manufacture of which would have produced debitage similar to core reduction.

Large flakes are generally the product of initial core reduction; small flakes the product of tool manufacture and rejuvenation. The individual pieces of debitage were measured by placing each upon a grid comprised of a series of concentric circles. Each was assigned to one of seven size classes: 0.5 cm, 1 cm, 2 cm, 3 cm, 4 cm, 5 cm, >5 cm. Flake size information is summarized by raw material type in Table 10.11.

Obsidian debitage may be characterized as small, no piece being larger than 2 cm. The CCS debitage assemblage, though slightly larger in size than the obsidian assemblage, may also be considered small. As might be expected, the basalt debitage assemblage is the largest of the three material types, with 35.1% larger than 3 cm in size.

In summary, initial core reduction of obsidian occurred elsewhere and obsidian occurs at the Swiftwater site as a scarce material used for the manufacture of chipped tools. Some CCS core reduction occured at the Swiftwater site along with the manufacture and rejevenation of chipped stone tools. Basalt, a locally abundant resource found as cobbles, was used at the site to manufacture flaked cobble tools. The debitage resulting from the manufacture of choppers resembles an assemblage that might otherwise be attributed to initial core reduction.

Table 10.11. Debitage size by material at the Swiftwater site.

	Flake Size (cm)														
Material	0.5		1		2		3		4		5		5+		
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	Total
Obsidian	12	80.0%	3	20.0%	0	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	15
CCS	1	7.7%	8	61.5%	1	7.7%	3	23.1%	-	0.0%	-	0.0%	-	0.0%	13
Basalt	-	0.0%	9	15.8%	12	21.1%	16	28.1%	9	15.8%	5	8.8%	6	10.5%	57
Total	13	15.3%	20	23.5%	13	15.3%	19	22.4%	9	10.6%	5	5.9%	6	7.1%	85

DISCUSSION AND SUMMARY

The Swiftwater site (35DO359) is situated on a broad alluvial terrace adjacent to the North Umpqua River opposite its confluence with Rock Creek, approximately one mile upstream from The Narrows aboriginal fishery. Small test excavations conducted in 1981 revealed the terrace to contain cultural material (Corliss 1981).

A cultural evaluation of a portion of the site was conducted in 1989 by an INFOTEC Research Inc. field crew in order to assess the impact of a proposed BLM parking lot to be constructed at the North Umpqua Trail head (Gibson and Pettigrew 1989). This investigation included the excavation of 22 auger probes and five test pits from which fifteen tools--a projectile point fragment and fourteen cobble tools--and 85 pieces of debitage were recovered. In the vicinity of the planned parking lot the density of cultural material was very low, with a maximum of 30 items/m^3 in two of the 10 cm excavation levels. Beyond the parking lot area and closer to the edge of the terrace where previous testing had been undertaken, the density of cultural material was found to be greater, with a maximum of 210 items/m^3.

An examination of the vertical distribution of cultural material from both the parking lot area, at the southwest end of the terrace, and the northeast portion of the terrace nearer the river (Figure 10.4) indicates the presence of a single component. This component is limited to the upper soil stratum, a reddisn-brown silt, and is concentrated in the upper 50 cm.

No diagnostic material was recovered from the Swiftwater site evaluation. The single projectile point collected is broken. Charcoal collected from cultural deposits during the excavation provide the potential for radiometric dating of the site. Stratigraphic evidence indicates that the Swiftwater site component represents an occupation post-dating the 6600 BP Mt. Mazama eruption. There is no suggestion, however, that the occupation is that ancient.

Fire-cracked rock and cobble choppers are ubiquitous at the site, discovered in auger probe and test pit excavations at the two portions of the site tested. The southwestern portion of the terrace is dominated by fire-cracked rock and choppers. The northeastern portion, closer to the terrace edge and where TP5 was excavated, contains lithic debitage of CCS and obsidian in proportions not uncommon to other sites in the region, though the density is not high. The conspicuous absence of CCS and obsidian debitage from the southwestern portion of the site in the vicinity of the proposed parking lot indicates a differential use of the site area. An analysis of this debitage indicates that obsidian and CCS were used in the manufacture of chipped stone tools; the basalt debitage is consistent with the manufacture of cobble choppers.

Given the site setting (at the confluence of two major Umpqua Basin tributaries) and its proximity to a known aboriginal fishery, it is quite likely that the cultural materials observed at the Swiftwater site are related to the processing of winter salmon supplies. The choppers may have been used in the construction of wooden drying racks; fire-cracked rock may represent the remains of rock ovens used for baking salmon (Stewart 1982). Because of the lack of CCS and obsidian debitage, it might be suggested that fewer, more specialized activities were conducted at the southwestern portion of the site. It seems quite likely, however, that these same activities helped shape the archaeological record of the northeastern portion of the site.

Test excavations conducted at the Swiftwater site in 1981 and again in 1989 failed to yield an artifact assemblage of great diversity. It seems unlikely that site 35DO359 represents a village, as originally suggested (Corliss 1981). It is more likely that the Swiftwater site was used as a special purpose site, possibly a seasonal fishing camp. The significance of this site lies in its potential to provide a signature for such specialized activities and add to our understanding of the settlement-subsistence pattern of the Umpqua Indians.

It is recommended that the northeastern portion of the terrace be monitored for potential damage caused by a) the excavation of shallow slit trenches by fishermen, and b) the anticipated increase in traffic on the North Umpqua Trail that may expose cultural material.

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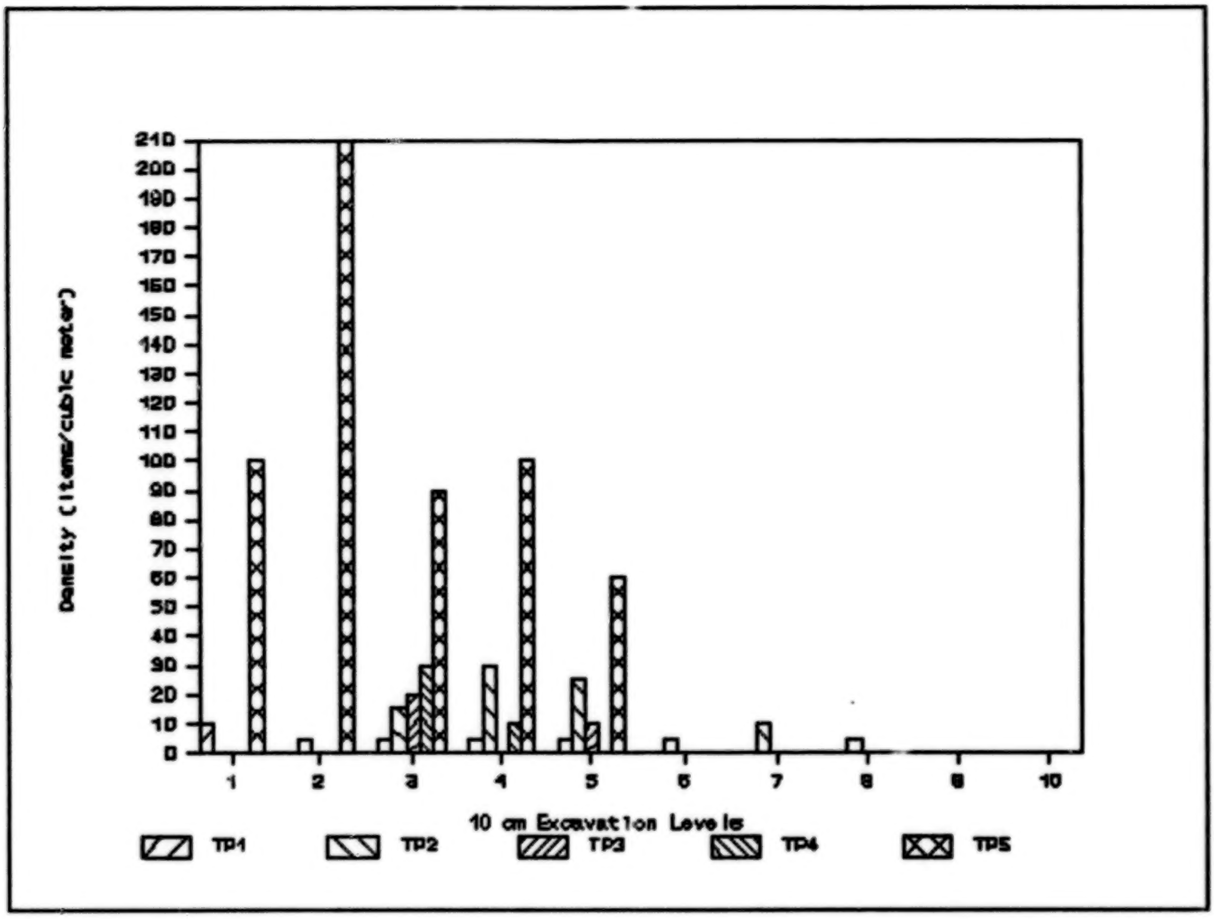

Figure 10.4. Vertical distribution of cultural material in the five test pits excavated at the Swiftwater site. TPs 1 through 4 were excavated in the vicinity of the proposed parking lot; TP5 was excavated closer to the edge of the terrace.

REFERENCES CITED

Applegate, Jesse
1907 The Yangoler Chief. Review Publishing Company, Roseburg, Oregon.

Baldwin, Ewart M.
1981 Geology of Oregon, 3rd ed. Kendall/Hunt Publishing Co., Dubuque, Iowa.

Barner, Isaac N.
1979 Archaeological Testing and Evaluation of the Glide Ranger Station, Douglas County, Oregon. Report to the Umpqua National Forest by the Department of Anthropology, Oregon State University, Corvallis.

Baxter, Paul W.
1987 Archaeological Testing at Limpy Rock Shelter: An Upland Hunting Camp in the North Umpqua Valley. Report to the Umpqua National Forest by Heritage Research Associates, Eugene, Oregon. HRA Report No. 65.

1989 Archaeological Testing at the Canton Creek Site, Douglas County, Oregon. Report to the Umpqua National Forest by Heritage Research Associates, Eugene, Oregon. HRA Report No. 88.

Beckham, Stephen Dow
1986 Land of the Umpqua: A History of Douglas County, Oregon. Douglas County Commissioners, Roseburg, Oregon.

Berryman, Judy A.
1987 Archaeological Site Evaluation of the Little Oak Flat, Umpqua National Forest, Roseburg, Oregon. Report to the Umpqua National Forest by TMI Environmental Services, San Diego, California.

Berryman, Stanley R.
1987 Archaeological Site Evaluation of 35DO265, the Apple Creek Site, Umpqua National Forest, Roseburg, Oregon. Report to the Umpqua National Forest by TMI Environmental Services, San Diego, California.

Churchill, Thomas E.
1986 Archaeological Investigations of the Reynolds Site (35DO372). Report to the Umpqua National Forest by Coastal Magnetic Search & Survey, Salem, Oregon.

Churchill, Thomas E. and Paul C. Jenkins
1985 Testing and Evaluation of the Glide Ranger Station Site, 35DO58. Report to the Umpqua National Forest by Coastal Magnetic Search & Survey, Salem, Oregon.

Corliss, David
1981 Oregon Archaeological Survey, Site Form 35DO359. On file at the Oregon State Museum of Anthropology, University of Oregon, Eugene.

Douglas, David
1959 Journal Kept by David Douglas During His Travels in North America 1823-1827. Antiquarian Press, Ltd., New York.

Drucker, Phillip
1937 The Tolowa and Their Southwest Oregon Kin. University of California Publications in American Archaeology and Ethnology, 36:221-300, Berkeley.

Franklin, Jerry and C. T. Dyrness

1973 Natural Vegetation of Oregon and Washington. USDA Forest Service General Technical Report PNW-8. Pacific Northwest Forest and Range Experiment Station, US Department of Agriculture, Portland, Oregon.

Freidel, Dorothy E. et al.

1989 Alluvial Stratigraphy and Human Prehistory of the Veneta Area, Long Tom River Valley, Oregon: The Final Report of the Country Fair/Veneta Archaeological Project. Report to the National Park Service, US Department of Interior, and the Oregon State Historic Preservation Office by the Oregon State Museum of Anthropology and Department of Geography, University of Oregon, Eugene.

Gibson, Eric C. and Richard M. Pettigrew

1989 Preliminary Archaeological Test Excavations at 35DO359, Douglas County, Oregon. Report to the Bureau of Land Management, Roseburg District, Roseburg, Oregon by INFOTEC Research, Inc., Eugene, Oregon.

Hanes, Richard C.

1976 Umpqua Valley Prehistory; A First Step Toward Understanding Aboriginal Adaptations to the Southwest Oregon Interior Region. Manuscript on file at the Bureau of Land Management, Roseburg District, Roseburg, Oregon.

1977 Archaeological Survey of the Umpqua Valley: A First Year Report. Paper presented at the 30th Annual Northwest Anthropological Conference, April 9, 1977. Victoria, British Columbia.

Hemphill, Brian E.

1989 Osteological Analysis of the Skeletal Remains from the Narrows Site. In Archaeological Investigations at the Narrows and Martin Creek Sites, Douglas County, Oregon, by Brian L. O'Neill. Cultural Resource Series No. 4, Bureau of Land Management, Oregon State Office, U.S. Department of the Interior.

Hoijer, Harry

1956 The Chronology of the Athapascan Languages. International Journal of American Linguistics, 22:4:219-232.

1960 Athapaskan Languages of the Pacific Coast. In S. Diamond (ed), Culture in History: Essays in Honor of Paul Radin, pp 960-976. Columbia University Press, New York.

Jenkins, Paul C.

1988 Archaeological Investigations at the Snuff Out Site, 35DO379. Report to the Umpqua National Forest by Coastal Magnetic Search & Survey, Salem, Oregon.

Jenkins, Paul C. and Thomas E. Churchill

1989 Archaeological Investigations of the Dry Creek Site, 35DO401. Report to the Umpqua National Forest by Coastal Magnetic Search & Survey, Salem, Oregon.

Lauman, Jim E. et al.

1972 Fish and Wildlife Resources of the Umpqua Basin, Oregon and Their Water Requirements. Oregon State Game Commission, Portland, Oregon.

Lyman, R. Lee (ed)

1985 Archaeological and Geoarchaeological Investigations at the Sylmon Valley School Site (35DO275), Southwestern Oregon. Reprot to the Roseburg Sanitary Authority by the Department of Anthropology, Oregon State University, Corvallis, Oregon.

Minor, Rick

1983 Archaeological Testing at the South Umpqua Falls Rockshelters: A Preliminary Report. Report to the Umpqua National Forest by Heritage Research Associates, Eugene, Oregon. HRA Report No. 17.

1985 Paleo-Indians in Western Oregon: A Description of Two Fluted Projectile Points. Northwest Anthropological Research Notes, 19:1:33-40.

1987 Archaeology of the South Umpqua Falls Rockshelters, Douglas County, Oregon. Report to the Umpqua National Forest by Heritage Research Associates, Eugene, Oregon. HRA Report No. 64.

Minor, Rick and Thomas J. Connolly

1987 Archaeological Testing at Times Square Rockshelter, Douglas County, Oregon. Report to the Umpqua National Forest by Heritage Research Associates, Eugene, Oregon. HRA Report No. 55.

Netboy, Anthony

1974 The Salmon: Their Fight For Survival. Houghton Mifflin Company, Boston.

O'Neill, Brian L.

1987 The Tyee Burial Site (35DO393): A Late Archaic Burial in the Middle Umpqua River Basin. Report on file at the Oregon State Museum of Anthropology, University of Oregon, Eugene.

1988 Archaeological Evaluation of the Shivigny East Site (35DO397): A Ridge Crest Hunting Camp in the Upper Umpqua Basin, Douglas County, Oregon. Report on file at the Bureau of Land Management, Roseburg District, Roseburg, Oregon.

1989 Archaeological Investigations at the Narrows and Martin Creek Sites, Douglas County, Oregon. Cultural Resource Series No. 4, Bureau of Land Management, Oregon State Office, US Department of the Interior.

Ottis, Nancy and Terry West

1984 Archaeological Testing at the Gatchel Site (35DO252). Rogue Valley Archaeological Society, Grants Pass, Oregon.

Purdom, William B.

1964 The Geologic History of the Diamond Lake Area, Umpqua National Forest, Douglas County, Oregon. US Department of Agriculture, Forest Service, and Douglas County Park Department, Roseburg, Oregon.

Riddle, George W.

1968 History of Early Days in Oregon. Reprinted from the Riddle Enterprise as a facsimile reproduction, The Shorey Book Store, Seattle, Washington.

Ross, Richard E. and Sandra L. Snyder

1986 The Umpqua/Eden Site (35DO83): Exploitation of Marine Resources on the Central Oregon Coast. In Contributions to the Archaeology of Oregon 1983-1986, K.M. Ames (ed), pp 80-101. Occasional Papers No. 3, Association of Oregon Archaeologists.

Schreindorfer, Crystal S.
1985 Marial: 1984 Archaeological Investigations at 35CU84. Report to the Bureau of Land Management, Medford District, by the Department of Anthropology, Oregon State University, Corvallis.

Simmons, Alexy
1985 Ethnography and History. _In_ Archaeological and Geoarchaeological Investigations at the Sylmon Valley School Site (35DO275) Southwestern Oregon, R.L. Lyman (ed), pp 3.1-3.18. Report to the Roseburg Sanitary Authority by the Department of Anthropology, Oregon State University, Corvallis.

Skinner, Craig
1983 Obsidian Studies in Oregon. MA Thesis, Department of Interdisciplinary Studies, University of Oregon, Eugene.

Snyder, Sandra L.
1981 Medicine Creek: Pre- and Post-Mazama Occupation in the Cascades. _Tebiwa_, 23.

Stafford, Howard and Fred Voget
1936 Idlwyld Park Reconnaissance. Manuscript on file at the Oregon State Museum of Anthropology, University of Oregon, Eugene.

Stewart, Hillary
1982 _Indian Fishing: Early Methods on the Northwest Coast_. University of Washington Press, Seattle.

Sullivan, Alan P. III and Kenneth C. Rozen
1985 Debitage Analysis and Archaeological Interpretation. _American Antiquity_ 50:4:755-779.

Toepel, Kathryn A.
1987 Ethnographic Background. _In_ Cultural Resource Overview of the Willamette National Forest: A 10-Year Update, by Rick Minor. Report to the Willamette National Forest by Heritage Research Associates, Eugene, Oregon. HRA Report No. 60.

USDA
1980 Soil Interpretation Record: Crater Lake Variant. Soil Conservation Service, Douglas County, Oregon.

Wert, S.R. et al.
1977 Soil Inventory of the Roseburg District. Bureau of Land Management, Roseburg District, Roseburg, Oregon.

Winthrop, Kathryn
1989 Bogus Creek Data Recovery Project (35DO278). Report to the Umpqua National Forest by Winthrop Associates, Ashland, Oregon.

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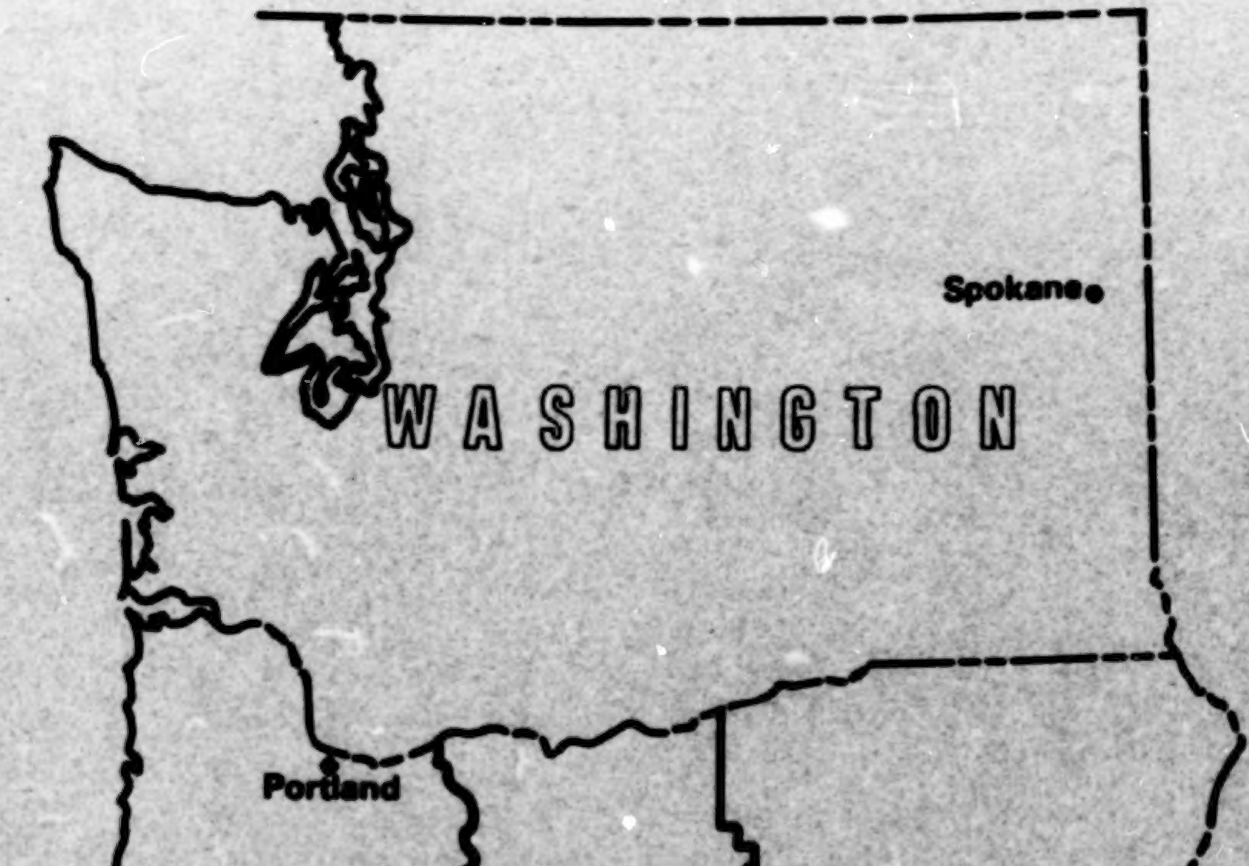
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ABSTRACT

Limited test excavations were conducted at the Crack Shot site (35LA848) located in the Mohawk River drainage. The excavations were sufficient to determine the horizontal extent of the cultural deposit along the east-west axis of the site and to ascertain the depth of the deposit near the center of the site.

The small sample of material recovered from the text excavations are indicative of a low density lithic scatter where the maintenance of chipped stone tools and the manufacture and use of flaked cobble tools was carried out. No temporally sensitive diagnostic artifacts were recovered.

The cultural deposit is judged to lack a sufficient concentration of artifactual material to expect that further excavation of the site will produce significant new knowledge. The Crack Shot site is determined to be ineligible for listing on the National Register of Historic Places.

INTRODUCTION

The Crack Shot site (35LA848) is located in the McKenzie Resource Area of the Eugene District, Bureau of Land Management. The site covers an area of approximately 130 m^2. The cultural deposit is characterized as a low density lithic scatter with cultural material confined to the upper 10-15 cm of the soil profile except where present in the fill of rodent burrows.

The purpose of the project reported here was to document the vertical and horizontal extent of the Crack Shot site, to attempt to ascertain to what extent the site's integrity has been disturbed, and to evaluate the site's archaeological significance in terms of its eligibility for inclusion on the National Register of Historic Places.

LOCATION AND NATURAL SETTING

The Crack Shot site is situated on the east aspect lower slope along the west margin of the Mohawk Valley (see Figure 5.1). Located approximately two kilometers southwest of the community of Donna (NE¼SW¼ Sec. 33, T. 16 S., R. 2 W., Will. Mer.). The site is at an elevation of 880 feet a.s.l. (268 meters) some 100 meters above and 500 meters west of the floor of the Mohawk River Valley.

The site is within the coniferous forest community of the Western Oregon Interior Valley Vegetation Zone (Franklin and Dyrness 1973). Douglas-fir, western hemlock, western redcedar and incense cedar constitute the coniferous component of the overstory while bigleaf maple, golden chinkapin and an occasional Oregon white oak constitute the deciduous component. Understory vegetation consists of vine maple, beaked hazel and dogwood as well as hemlock, white fir, and western redcedar reproduction.

ARCHAEOLOGICAL AND ETHNOGRAPHIC BACKGROUND

A number of medium to low density lithic scatters in and around the Mohawk Valley have been discovered and recorded during the past 20 years. Three sites in the Mohawk River drainage have been excavated and the results of the excavations formally reported.

The Halverson site (35LA261), located approximately 4½ kilometers east of the Crack Shot site, was excavated by the University of Oregon archaeological field school crew during the summer of 1977. The site proved to be a task specific location occupied during the Late Archaic and Early Historic periods. A single date of 160±130 radiocarbon years B.P. was obtained from the site (Minor and Toepel 1980).

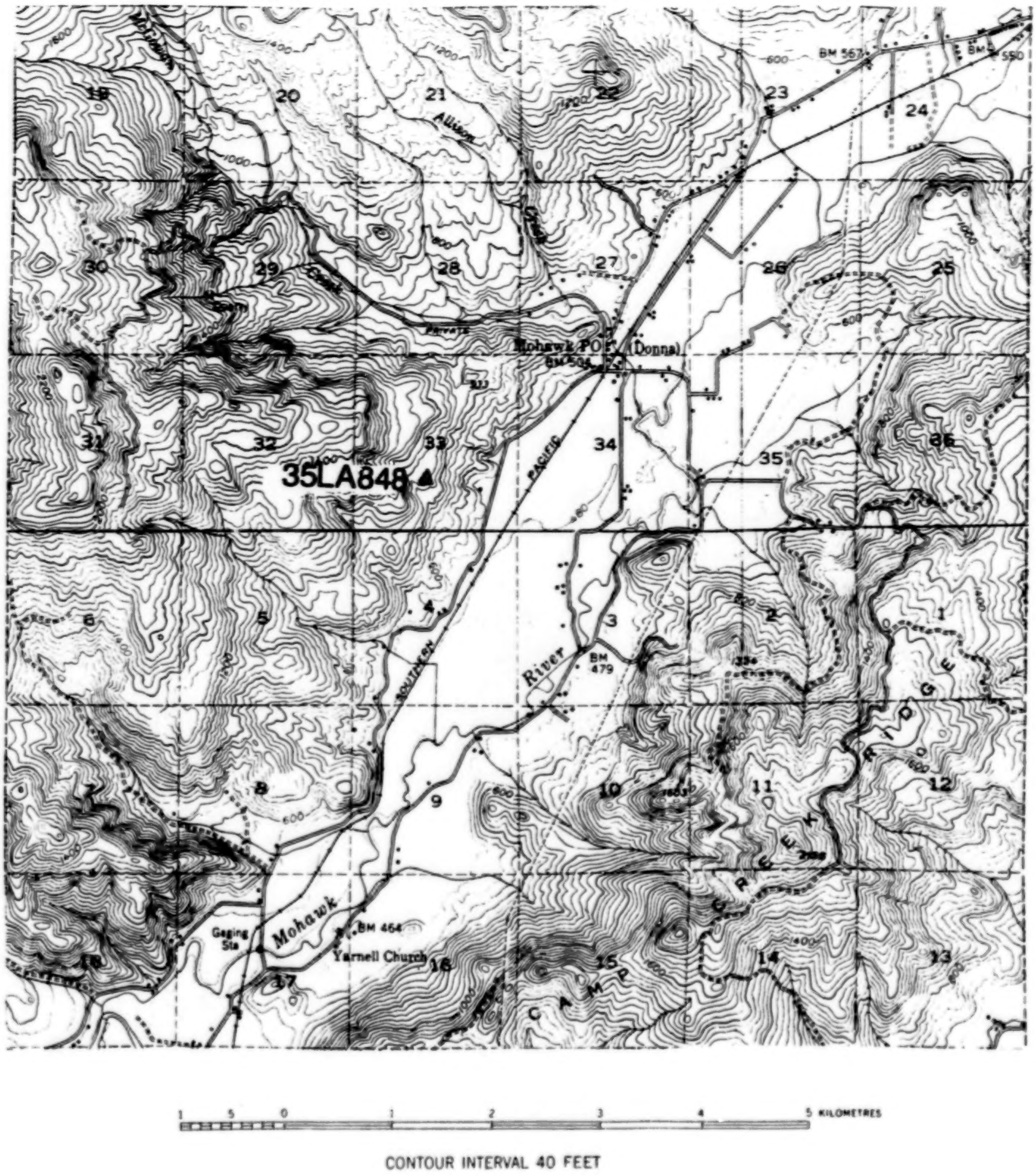

Figure 5.1. Location of the Crack Shot site (35LA848).
Base Map: U.S.G.S. Marcola, Ore. 15' Quadrangle Sheet, 1950 ed.

The Mill Creek No. 6 site (35LA365) and the Mill King site (35LA805), located approximately 12 kilometers northeast of the Crack Shot site were excavated by BLM personnel during the fall of 1985 and the summer of 1987 respectively. The Mill Creek No. 6 site proved to be a task specific location where a full range of biface reduction manufacturing processes was carried out in addition to flaked stone tool maintenance and initial processing of kills. Based on the suite of projectile points recovered the Mill Creek No. 6 site has been assigned to the transition between the Early and Middle Archaic dated to approximately 4000 B.C. (Southard 1986). The Mill King site proved to be a task specific location associated with manufacture and maintenance of flaked stone tools (Southard 1987). The single temporally sensitive diagnostic artifact recovered from the site was a projectile point similar to types assigned to the Late Archaic in the Willamette Valley.

The Beebe site (35LA216), located on the west flank of the Coburg Hills approximately 8 kilometers west of the Crack Shot site, was excavated by members of the University of Oregon archaeological field school during the summer of 1972. Folansbee (1975) concluded that the Beebe site served as a seasonally occupied locus for small groups engaged in hunting and associated support activities. Cluster analysis studies of projectile points grouped the Beebe site assemblage with recent components from nearby sites on the floor of the Willamette Valley (Henn, Mack and Sanford 1975). These assemblages are assigned to the Late Archaic Hurd and Fuller phases under the cultural sequence developed by Minor and Toepel (1981:164, Table 14).

Connolley (1983) utilized locational and site size data from recorded sites in the Mohawk Valley as part of a comparative study of aboriginal settlement patterns within three of the sub-basins in the southern Willamette Basin.

Sites in the Mohawk Valley and those within the lower-mid McKenzie River drainage were within the range of the Mohawk band of the Kalapuya at the time of Euro-American contact (Beckham 1976; Toepel and Beckham 1981:57-58). A summary of the archaeology and ethnography of the southern Willamette Valley and the adjacent uplands may be found in the Cultural Resource Overview of the Bureau of Land Management's Eugene District (Beckham, Minor and Toepel 1981:49081, 117-176).

FIELD PROCEDURES

During the pre-sale inventory of this timber sale a single small obsidian flake was discovered in a duff scrape near what proved to be the center of the horizontal limits of the Crack Shot site. Six additional duff scrapes on the same topographic feature, a small spur ridge, yielded no cultural material. Despite the apparent paucity of cultural debris a decision was made to conduct sub-surface testing sufficient to ascertain the east-west limits of the cultural deposit. The north-south extent of the cultural deposit is assumed to coincide with the upper portion of the spur ridge on which it is sited.

A single 1 x 2 meter test pit (Test Pit 1) was excavated adjacent to the duff scrape which produced the obsidian flake. Excavation in the 1 x 2 meter test pit was halted at a depth of 10 cm below the surface, the unit was halved and the north half of the test pit (1 x 1 meter termed Test Pit 1A) was excavated to a depth of 20 cm below the surface. Four 50 x 50 centimeter test pits were excavated along the long axis of the topographic feature containing the site to help define the horizontal limit of the site. Test Pits 2 and 5 were located west of Test Pit 1 while Test Pits 3 and 4 were placed to the east (Figure 5.2). Only test pits 1, 1A and 2 yielded cultural material. Excavation in these test pits was halted at a depth of 10 cm below the surface. All excavated soil was processed through a one-quarter inch mesh screen and 2/3 of the excavated soil was then processed through a one-eighth inch mesh screen.

Following excavation a measured sketch map was made of the site and immediate surroundings.

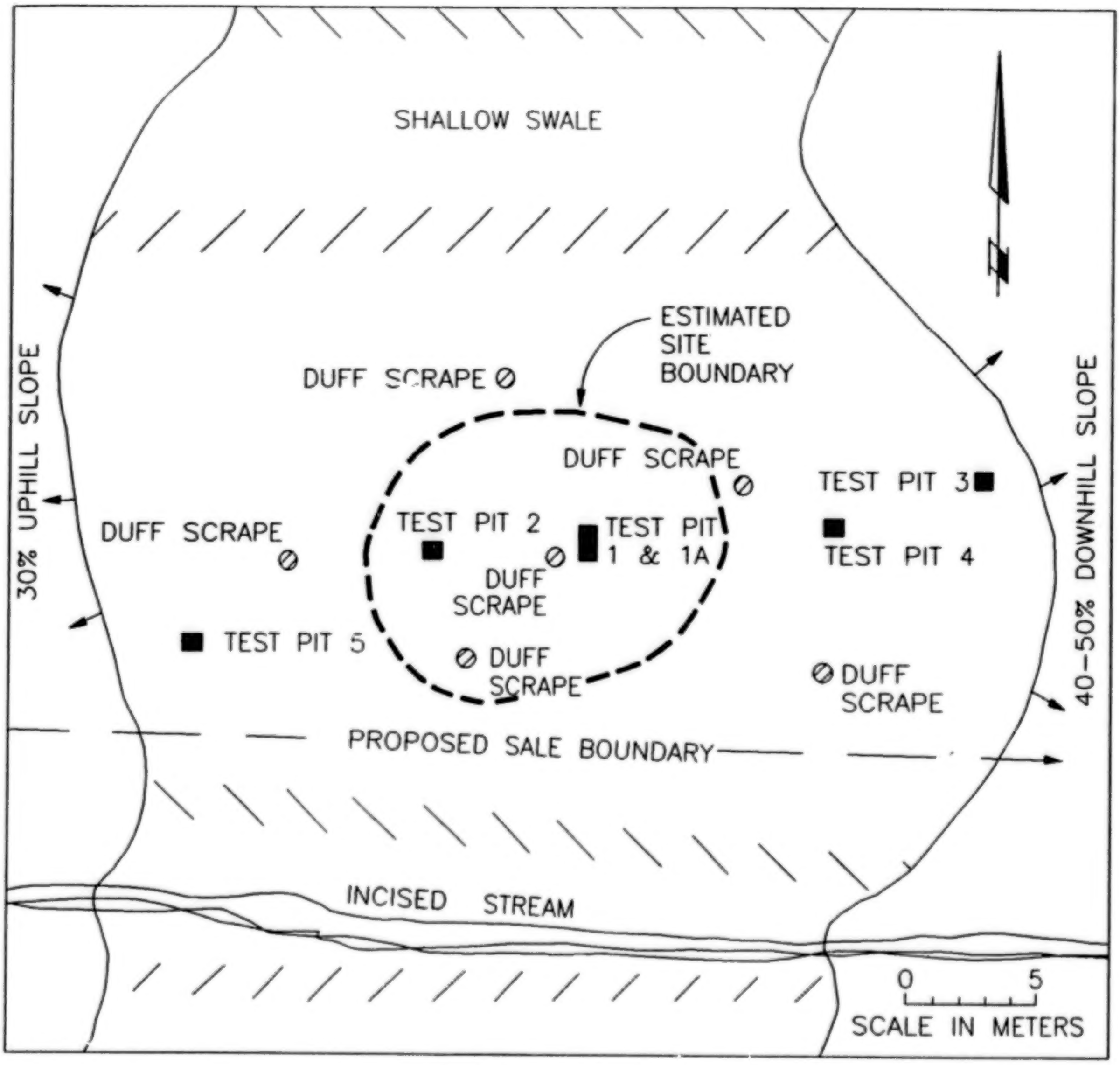

Figure 5.2. Measured sketch map of the Crack Shot site (35LA848).

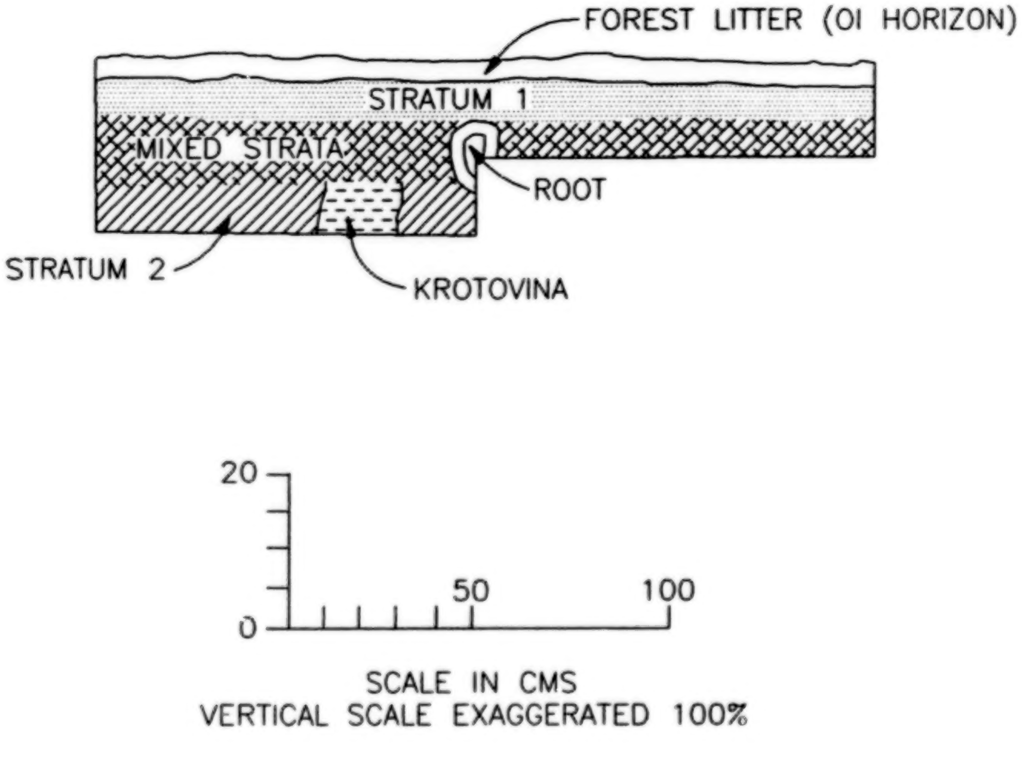

Figure 5.3. Stratigraphic profile, east wall of test pit 1, 1A.

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STRATIGRAPHY

Stratum 1. Stratum 1 is a dark reddish-brown (5YR3/3 moist), silty clay loam containing numerous fragments of basalt and partially weathered tuff. Fragments of charcoal are scattered throughout the stratum. Krotovina are present but difficult to define unless open. The boundary between stratum 1 and stratum 2 is obscure, one stratum grading into the other with no discernable line of demarcation.

Stratum 2. Stratum 2 is a dusky red (10R3/3 moist) silty clay containing numerous fragments of coarse basalt and weathered tuff. Basalt fragments range in size and number from many in the 1-2 cm size to rare pieces measuring 10 cm along the axis of maximum dimension. No charcoal fragments are present in Stratum 2. Filled krotovina are clearly discernable in stratum 2. The fill of krotovina is slightly darker and less compact than the surrounding undisturbed soil. Several large (15-20 cm dia.) filled krotovina were visible on the floor of Test Pit 1A at the 20 cm level (see Figure 5.3.).

Cultural Stratigraphy

The distribution of cultural material appears to be limited to Stratum 1 and the transition zone. Although the sample is limited to a 4-5 cm thick layer at the base of a 1 x 1 meter unit undisturbed Stratum 2 appears to be devoid of cultural material.

DESCRIPTION OF CULTURAL MATERIALS

Eight tools and 29 pieces of debitage were recovered from test pits. In addition 9 pieces of cryptocrystalline silicate thermal disaggregation product were recovered. Five lithic raw materials are represented in the site collection: cryptocrystalline silicate, obsidian, basalt, welded tuff and andesite.

Fourteen pieces (48%) of the recovered debitage and two of the tools are obsidian. One tool and ten pieces (34%) of debitage are cryptocrystalline silicate material. The remaining eighteen percent of the debitage consists of two basalt flakes, two andesite flakes and a single flake of welded tuff. The remaining tools include a basalt biface fragment, a basalt uniface and three cobble tools (one basalt and two andesite). Distributional data for tools recovered from the Crack Shot site are presented in Table 5.1. Distributional data for debitage are presented in Table 5.2 and debitage size data are presented in Tables 5.3, 5.4, and 5.5.

	Bifacially Worked Fragments	Unifacially Worked Fragments	Culturally Modified Flakes	Cobble Tools	TOTAL
Test Pit 1 (0-10 cm)		1	1	3	5
Test Pit 1A (10-20 cm)	2	1			3
TOTAL	2	2	1	3	8

Table 5.1. Distribution of tools recovered from the Crack Shot site (35LA848).

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	DEBITAGE TYPE																
Provenience	Primary Cortex Flakes		Secondary Cortex Flakes		Interior Flakes		Borken Interior Flakes		Interior Flake Fragments		Angular Waste		Thermally Protected Angular Waste		TOTAL		
Raw Material			CCS	weld tuff	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS		CCS	Obsid	CCS	Obsid	Weld Tuff
Test Pit 1 0-10 cm			1		1	2		3	2	1	1		6		5*	6	
Test Pit 1A 10-20 cm				1		1	1	2	2	3			2		3*	6	1
Test Pit 2 0-10 cm						2			2				1		2*	2	
TOTAL			1	1	1	5	1	5	6	4	1		9		10*	14	1

Table 5.2. Distribution of debitage recovered from test pit excavations at the Crack Shot site (35LA848).

	DEBITAGE TYPE															
Provenience	Primary Cortex Flakes		Secondary Cortex Flakes		Interior Flakes		Borken Interior Flakes		Interior Flake Fragments		Angular Waste		Thermally Protected Angular Waste		TOTAL	
Raw Material			bas	andes											bas.	andes
Test Pit 1 0-10 cm			2												2	
Test Pit 1A 10-20 cm				1												1
Test Pit 2 0-10 cm				1												1
TOTAL			2	2											2	2

Table 5.2 (cont'd)

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Bifacially Worked Fragments

Two bifacially worked fragments were recovered from test pit excavations. One item is obsidian and appears to be the tip of a projectile point. The second specimen is basalt and appears to be a portion of a biface which was broken during a manufacturing stage comparable to Callahan's biface reduction Stage 2 (Callahan 1970:Table 1).

Unifacially Worked Fragments

Two unifacially worked fragments were recovered from test excavations at the Crack Shot site. One item is a thick (7-11 mm) CCS piece with a curved working edge 17 mm in length. The angle of the bit varies between 65° and 80°. The second specimen is a fragment of a thick (20 mm) basalt flake with a curved working edge 10 cm in length. The angle of the bit varies between 30° and 45°.

Culturally Modified Flake

This specimen is a secondary decortation flake 25 mm long along the axis of maximum dimension. There is a 10 mm long section of edge damage on one margin. The edge damage consists of contiguous regular micro-flake scars. The material is obsidian.

Cobble Tools

Three tools manufactured from flaked andesite or basalt cobbles with smooth, waterworn cortex were recovered. One specimen is made from a split cobble which was unifacially flaked along one margin of opposing faces.

The item closely resembles tools which White (1975:211 and Fig. 14, e-f) termed "scraper planes". The item does not exhibit use wear to the extent noted by White, however, the intersection between the flaked and cortical surfaces appear slightly blunted or rounded.

A second specimen is a fragment of a thin (23-26 mm) flat cobble with a broadly convex working edge formed by unifacial flaking. The angle of the bit is between 65° and 70°. The item exhibits no use wear.

The third specimen is a fragment of thermally fractured basalt cobble which exhibits a small amount of recent battering on an old, re-patinated (naturally damaged?) edge.

Lithic Debitage

Six classes of debitage are recognized in ths study; primary cortex flakes, secondary cortex flakes, complete interior flakes, broken interior flakes, interior flake fragments and angular waste. Primary cortex flakes have cortex on 90-100% of the dorsal surface while cortex covers less than 90% of the dorsal surface of secondary cortex flakes. Interior flakes have no cortex on them. Complete interior flakes are just that - - whole. Broken interior flakes have an intact platform and bulb of force but are not whole, while interior flake fragments are distal fragments lacking the platform and some or all of the bulb of force. Angular waste consists of pieces with four or more facets lacking the attributes of flakes.

One additional class of items recognized in this study are thermal disaggregation products. This class of items includes several morphological forms. There are pot lid flakes and larger pieces with three or more broadly concave and/or convex faces--some exhibiting points of detachment near the centers of the broadly curved surfaces--and an absence of bulbs of force. Some items exhibit crazing. All items in this class are cryptocrystalline silicate material. The cultural relevance of this item class at Crack Shot is undetermined. Test excavations have not been extensive enough to ascertain whether cryptocrystalline silicates occur naturally in the local soil profile or whether all CCS material noted at the site represents material transported to the location by human agents.

As noted previously, approximately half (48%) of the recovered debitage is obsidian. All of the obsidian debitage consists of interior flakes; however, the casual flake tool is on a secondary decortation flake. Two of the flakes present are products of a bifacial thinning process.

Flake sizes (whole, broken and fragments) of obsidian debitage range between 1/2 cm and 2 cm along the axis of maximum dimension (see Table 5.3).

Obsidian	Debitage Size in cms along axis of maximum dimension							
DEBITAGE TYPE	1/2	1	2	3	4	5	6	TOTAL
Prim. Cort. Flk.								
Sec. Cort. Flk.								
Int. Complete		4	1					5
Int. Broken	2	2	1					5
Int. Frag.	1	3						4
Ang. Debris								
TOTAL 14	3	9	2					14

Table 5.3. Size distribution of obsidian debitage from the Crack Shot site (35LA848).

Cryptocrystalline silicate items constitute 34% of the debitage. One secondary decortation flake was recovered. Flake sizes range between 1 cm and 6 cm; however, 90% of the CCS debitage is less than 3 cm long along the axis of maximum dimension (see Table 5.4).

CCS	Debitage Size in cms along axis of maximum dimension							
DEBITAGE TYPE	1	2	3	4	5	6		TOTAL
Prim. Cort. Flk.								
Sec. Cort. Flk.						1		1
Int. Complete		1						1
Int. Broken		1						1
Int. Frag.	4	1	1					6
Ang. Debris		1						1
TOTAL 10	4	4	1					10

Table 5.4. Size distribution of crptocrystalline silicate debitage from the Crack Shot site (35LA848).

The remainder of the debitage (18%) consists of two basalt secondary decortation flakes, two andesite secondary decortation flakes and 1 welded tuff secondary decortation flake (see Table 5.5). The basalt and andesite secondary decortation flakes are consistent with the presence of cobble tools in the site assemblage and may be interpreted as evidence for on site manufacture or refurbishment of cobble tools.

Andesite, Basalt Welded Tuff	Debitage Size in cms along axis of maximum dimension							
DEBITAGE TYPE	1	2	3	4	5	6	>/10	TOTAL
Prim. Cort. Flk.								
Sec. Cort. Flk.		1*	1,1#	1			1*	5
Int. Complete								
Int. Broken								
Int. Frag.								
Ang. Debris								
TOTAL 5		1*	1,1#	1			1*	5

*andesite #welded tuff

Table 5. Size distribution of andesite, basalt and welded tuff debitage from the Crack Shot Site (35LA848).

The percentage of CCS debitage (34%) in the Crack Shot assemblage is notably different from percentages of this material in the assemblages of the three other sites in the Mohawk drainage where excavated samples have been analyzed: Halverson site, 75% (Minor and Toepel 1980:8), Mill Creek No. 6, 83% (Southard 1986:18) and the Mill King Site, 83% (Southard 1987:9).

SITE PARAMETERS

The limited sub-surface testing conducted at the Crack Shot site precludes a detailed knowledge of site characteristics. The testing was sufficient to determine the horizontal extent of the deposit along the east-west axis and to gain some idea of the depth of the deposit.

1. Site Boundaries

The Crack Shot site covers an estimated 130 m^2. The horizontal extent of the deposit along the east-west axis was determined by test excavations. The site boundary along the north-south axis was drawn to coincide with the upper side slopes of spur ridge on which the site is located. The placement of the boundary at the point of slope break is based on the experience gained from recording numerous sites in similar settings during the past thirteen years.

2. Depth of Cultural Deposit

The single 1 x 1 meter unit excavated to a depth at which rodent burrows and root cast were discernable in plan and profile views provided evidence indicating that the cultural deposit is limited to the upper 10 to 15 cm of the soil profile. The maximum volume of the cultural deposit is estimated to be between 13 m^3 and 20 m^3.

3. Cultural Features

No cultural features were discovered in the 2.25 m^2 excavated area. The small sample size (<2% of site area) provides no assurance that features are or are not present at the site.

4. Site Integrity

The site has not been disturbed by previous timber harvest activities. Natural agents including windthrow and rodent burrowing have perturbed the cultural deposit to an undetermined extent.

5. Density of Cultural Materials

An average density of 111 items/m^3 was calculated for the total volume of excavated cultural deposit. (This figure excludes CCS thermal disaggregation products. Including this item class raises the average density to 138 items/m^3.) NOTE: The small sample size (between 1.6% and 2.5% of the estimated total volume of the cultural deposit) raises the question of the effect that sampling vagaries may have on the validity of the artifact density figure.

FUNCTION AND CHRONOLOGY

The small sample size places severe limits on what can be inferred about the function of the Crack Shot site. The presence of small-sized, interior flakes and flake fragments of both CCS and obsidian would appear to indicate that maintenance or refurbishment of chipped stone tools occurred at the site.

The presence of flaked cobble tools and secondary decortation flakes of raw materials indicate that the manufacture and use of casual cobble tools occurred on site. There is no evidence to suggest the tasks performed with the cobble tools.

The failure to recover projectile points or other temporally sensitive diagnostic tools precludes the possibility of assigning the site to a period within the Willamette Valley cultural sequence.

SITE POTENTIAL AND SIGNIFICANCE

The cultural deposit at the Crack Shot site has not been disturbed by timber harvest or similar modern activities. Despite some disturbance of the deposit due to rodent burrowing and probable windthrow the site retains a high degree of integrity. However, it is my professional opinion that the cultural deposit lacks sufficient concentration of artifactual material to expect that excavation would produce significant new information. I do not consider this site to be eligible for listing on the National Register of Historic Places.

The site is situated on the South boundary of the sale unit in a location where it will escape all or most of the potential for damage due to timber harvest activities.

REFERENCES CITED

Beckham, Stephen Dow

1976 Indian distribution in Oregon. In Atlas of Oregon, edited by William G. Loy, pp. 6-7. University of Oregon Books, Eugene, Oregon.

Beckham, Stephen Dow, Rick Minor, and Kathryn Anne Toepel

1981 Prehistory and history of BLM lands in west-central Oregon: a cultural resource overview. University of Oregon Anthropological Papers 25.

Connolly, Thomas J.

1983 Modeling prehistoric cultural systems in the Willamette Valley: a demonstration of regional diversity. In Contributions to the Archaeology of Oregon 1981-1982, edited by Don E. Dumond. Association of Oregon Archaeologists Occasional Papers 2:27-39.

Folansbee, Julie A.

1975 Archaeological remains at the Beebe Site (35LA216) in the southeastern Willamette Valley foothills. In Archaeological Studies in the Willamette Valley, Oregon, edited by C. Melvin Aikens. University of Oregon Anthropological Papers 8:403-424.

Franklin, Jerry F. and C. T. Dyrness

1973 Natural vegetation of Oregon and Washington. Pacific Northwest Forest and Range Experiment Station General Technical Report PNW-8.

Minor, Rick and Kathryn Anne Toepel

1980 A preliminary report on the Halverson site (35LA261): A seasonal campsite in the upper Willamette Valley, Oregon. Paper presented at the 33rd annual Northwest Anthropological Conference.

Minor, Rick and Kathryn Anne Toepel

1981 Archaeological overview. In Prehistory and history of BLM lands in west-central Oregon: A cultural resource overview, by Stephen Dow Beckham, Rick Minor and Kathryn Anne Toepel. University of Oregon Anthropological Papers 25:117-183.

Southard, Michael D.

1986 An archaeological evaluation of the Mill Creek No. 6 site (35LA365), Lane County, Oregon. Report on file with the Bureau of Land Management, Eugene District Office.

1987 An archaeological evaluation of the Mill King site (35LA805), Lane County, Oregon. Report on file with the Bureau of Land Management, Eugene District Office.

Toepel, Kathryn Anne and Stephen Dow Beckham

1981 Ethnographic overview. In Prehistory and History of BLM Lands in West-Central Oregon: A Cultural Resource Overview, by Stephen Dow Beckham, Rick Minor and Kathryn Anne Toepel. University of Oregon Anthropological Papers 25:41-115.

White, John R.

1975 The Hurd site. In Archaeological Studies in the Willamette Valley, Oregon, edited by C. Melvin Aikens. University of Oregon Anthropological papers 8:141-225.

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An Archaeological Evaluation of the
Manson Site (35LA818)
Lane County, Oregon

Michael D. Southard
District Archaeologist

Bureau of Land Management
Eugene District

April, 1989

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ABSTRACT

Limited test excavations at the Manson site (35LA818) located in the Little Fall Creek drainage of the Middle Fork Willamette River watershed have demonstrated that this low density lithic scatter was a task specific site where one or a few tasks requiring very generalized tool forms were performed.

The absence of projectile points or other temporally specific tool types in the excavated sample precludes assigning the assemblage to a particular time period.

The deposit is judged to lack a sufficient concentration of artifactual material to expect that further excavation of the site will produce significant new knowledge. The Manson site is determined to be ineligible for listing on the National Register of Historic Places.

INTRODUCTION

The Manson site (35LA818) is located in the McKenzie Resource Area of the Eugene District, Bureau of Land Management. The site covers an area of approximately 1600 sq. meters. The cultural deposit is characterized as a low density lithic scatter with cultural material confined to the upper 10 - 15cm of the soil profile except where material is present in the fill of krotovinae. Most of the site is situated in a stand of mature (100 year old) timber with a dense shrub/hardwood understory and numerous downed logs on the forest floor. The stand is scheduled for final harvest in the near future. Approximately 200 square meters along the south margin of the site are situated in a reforested clearcut harvested more than two decades ago. Selective harvest operations to salvage dead and windthrown timber were conducted some twenty years ago in the portion of the mature stand where the Manson site is located. Vestiges of tractor logging skid trails are barely discernable as partial linear patterns in the shrub/hardwood understory.

The purpose of the project reported here was to document the nature of the Manson site, the extent to which its integrity has been disturbed, and to evaluate the site's archaeological significance in terms of its eligibility for inclusion on the National Register of Historic Places.

LOCATION AND NATURAL SETTING

The Manson site is situated on a dissected, west-facing bench overlooking the valley of Little Fall Creek approximately 12.5 kilometers upstream from the confluence of Little Fall Creek and Fall Creek in the Middle Fork Willamette River watershed. Located approximately 12.5 kilometers eastnortheast of the town of Fall Creek (SE1/4NE1/4, Sec. 21,T. 18S., R. 1E., Willamette Meridian) the site is situated at an elevation of 1120 feet a.s.l. (341 meters) some 50 meters above and 350 meters east of Little Fall Creek (Figure 6.1). The terrain in the immediate vicinity of the site is gentle with no more than a 5% slope. A shallow, minimally incised, intermittant drainage is located forty meters north of the northern edge of the site. The western margin of the site is delineated by a north-south trending outcrop of bedrock which extends a few centimeters above the soil surface.

The site is situated on or near the boundary between the coniferous forest community of the Western Oregon Interior Valley Vegetation Zone and the Tsuga heterophylla Zone of the the Western Cascades physiographic province (Franklin and Dyrness 1973). western hemlock dominates the overstory component of the stand with scattered specimens of Douglas-fir and western redcedar rounding out the coniferous trees present. Red alder, big-leaf maple, black cottonwood and buckthorn cascara constitute the deciduous component. The dense shrub and groundcover component consists of Oregon grape, salal, trailing blackberry and swordfern.

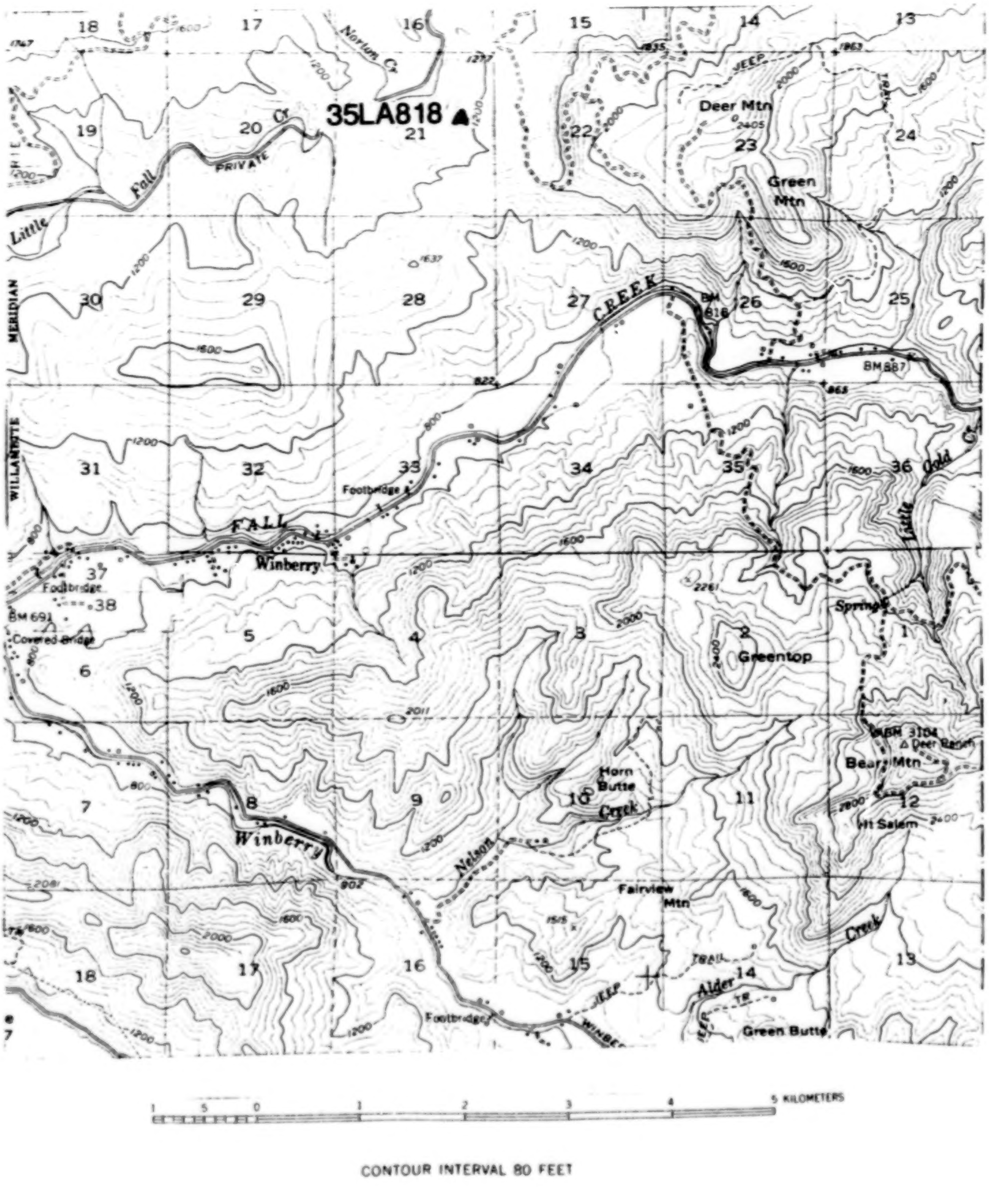

Figure 6.1. Location of the Manson site (35LA818).
Base Map: U.S.G.S. Hardesty Mtn., Ore. 15' Quadrangle Sheet, 1955 e.

ARCHAEOLOGICAL AND ETHNOGRAPHIC BACKGROUND

Thirteen lithic scatters have been discovered and recorded in the Little Fall Creek drainage since 1975. No sites in the drainage were excavated prior to the test excavations conducted at the Manson site during July and August of 1988.

Sixteen lithic scatters have been recorded in the Fall Creek drainage to the south. Nine of these sites were recorded by members of the University of Oregon site survey crew working on the Fall Creek Reservoir project during the summer of 1964. The seven remaining sites were recorded by Bureau of Land Management personnel between 1976 and 1986.

Limited test excavations and surface collections were conducted at all nine sites discovered during the U of O survey and more extensive excavations were conducted at site 35LA33. Site 35LA33, located approximately 7 kilometers southwest of the Manson site, yielded a variety of flaked and ground stone tools and over 4,700 pieces of stone debitage. The site may represent a small base camp and extractive station. At the time the excavated material was analyzed there was some question regarding the temporal assignment of the component(s) present (Cole 1967). According to Cole, the majority of the projectile points recovered resembled forms recovered from the excavated upper levels of Cascadia Cave which Newman (1966) had assigned to the period between 4000 B.C. and 2000 B.C. without the benefit of radiocarbon dating. Again according to Cole, the same suite of projectile point forms was also represented in surface collections from a series of thirty-one sites in the Upper Umpqua region. Cole (1967: 27) did not believe that the Umpqua region sites could possibly be four to six thousand years old and display the "...homogeneity of artifact form..." observed, rather these sites must date from a period more recent than 2000 B.C.

Two additional sites in the Fall Creek watershed have been tested and the results of excavation reported in the past three to four years. These are the Joe's Peak site, 35LA626 (Winkler 1986) and the Cornucopia site, 35LA751 (Southard 1986). Both sites are located in the Winberry Creek drainage.

A recent synthesis of data derived from sites located in the upper Middle Fork Willamette River drainage, located some 45 to 50 kilometers southeast of Fall Creek Reservoir, and excavated during the present decade would appear to lend some support to Cole's assignment of the broad-necked projectile point suite to a period more recent than 2000 B.C. A suite of broad-necked projectile points, sharing many similarities of form with the projectile points from 35LA33, are the hallmark of Baxter's Middle Archaic Period Staley Phase. The beginning date for the Staley Phase is not firmly established; however, Baxter places the beginning some time between 4000 B.C. and prior to 500 B.C. The ending date, based on radiocarbon dating, is placed at A.D.1400 (Baxter 1986: 117).

The Manson site and those sites in the Fall Creek drainage which were excavated by the U of O teams in 1964 and 1965 are on the border between the territories occupied by the Winefelly band of the Kalapuya and the Southern Molala at the time of Euro-American contact (Beckham 1976; Toepel and Beckham 1981:58, 85). Given the reputedly generally cordial nature of the contacts between the Kalapuya and the Southern Molala it is probable that the territorial boundary between the two groups was flexible and the area might have been occupied by members of either group (Toepel and Beckham 1981: 80, 85-86). A summary of the archaeology and ethnography of the southern Willamette Valley and the adjacent uplands may be found in the Cultural Resource Overview of the Bureau of Land Management's Eugene District (Beckham, Minor and Toepel 1981:41 - 95, 117 - 176).

FIELD PROCEDURES

During the pre-sale inventory of this unit a series of randomly placed duff scrapes were excavated at likely locations within the unit boundaries. When cryptocrystalline silicate debitage turned up in two duff scrapes in the northwestern portion of the unit the decision was made to conduct sub-surface testing. The two duff scrapes which had produced cultural material were situated approximately 35 meters apart, a fact which suggested the site might be fairly extensive when compared to the usual upland site in the Eugene District which averages less than 1000 square meters in area.

A series of nineteen test pits were excavated in order to determine the horizontal limits of the cultural deposit and to gain some knowledge concerning the range of cultural material present. Test Pit 4 measured 1x2 meters, the remaining test pits were 1 meter square. Test Pit 1 was excavated to a depth of 20 centimeters below ground surface in two 10 centimeter levels, excavation of the remaining test pits was closed out at a depth of 10 centimeters below ground surface. Test pits 1 and 4 were sited adjacent to the two duff scrapes which had yielded cultural material. Siting of the other seventeen test pits was done with an eye to sampling the cultural deposit while defining the site perimeter and avoiding small thickets of hardwood undergrowth or large downed logs. All excavated soil was processed through a one-quarter inch mesh screen. Two-thirds of the processed soil was then passed through a one-eighth inch mesh screen. Test pits 6, 10, 14, 17, and 18 yielded no cultural material and are judged to lie outside the site boundaries.

Following excavation of the test pits a measured sketch map of the site was made which located the test pits and the site boundary (Figure 6.2).

STRATIGRAPHY

The natural stratigraphy at the Manson site is very like that encountered at other upland lithic scatters excavated to date in the Eugene District: a thin, dark colored layer of organic material in various stages of decomposition ("O" horizon) overlying a mixed zone of organic and mineral soil which in turn overlies a mineral soil zone ("A" horizon) of varying depth to bedrock. Mixing of the deposit in the upper portion of the profile is quite evident and animal burrows, both filled and open, were observed during excavation.

Stratum 1. Stratum 1 ranges between 1 and 2 centimeters in thickness. This stratum is a black to very dark gray (10YR2/1 to 10YR3/1, moist) friable silt loam with a very high organic content. Partially decayed fir needles, twigs and cones and shell fragments of beaked hazel nut were present in this "O" horizon soil. Fragments of charcoal were also present in the "O" horizon in all nineteen test pits.

Stratum 2. Stratum 2 is a dark brown (7.5YR3/2, moist) silty clay loam containing many fragments of rock (basalt and tuff breccia). Most of the rock fragments are in the 1 to 2 centimeter diameter size range; however, there are occasional pieces measuring as large as 20cm along the axis of maximum dimension. A 6 to 7 centimeter thick dark brown (10YR3/3, moist) mixed soil zone lies between the "O" horizon at the top of the profile and the unmixed "A" horizon soil which was first encountered near the base of level 1 (10cm below surface). The number and size of rock fragments in the mixed soil zone are similar to those in Stratum 2. Krotovinae are discernable to some degree in the mixed soil zone and are clearly visible in Stratum 2. See Figure 6.3 for a profile showing stratigraphy of the upper soil zone.

Cultural Stratigraphy

Stratum 1 was not excavated as a separate soil zone but was included with the mixed soil zone. Both cryptocrystalline silicate and obsidian debitage and tools were present in the Stratum 1/mixed soil zone although not all items were present in each test pit. A single sample of Stratum 2 was excavated (Test Pit 1, level 2). This was not a "pure" sample because three large krotovinae were present in the eastern portion of the test pit. No attempt was made to segregate the fill of the krotovinae from the remainder of the level so it is highly probable that at least some of the cultural debris recovered came from this fill. Cultural debris recovered from Test Pit 1, level 2 dropped to 16% of the total recovered from level 1, Test Pit 1 (Table 6.2). It is not possible

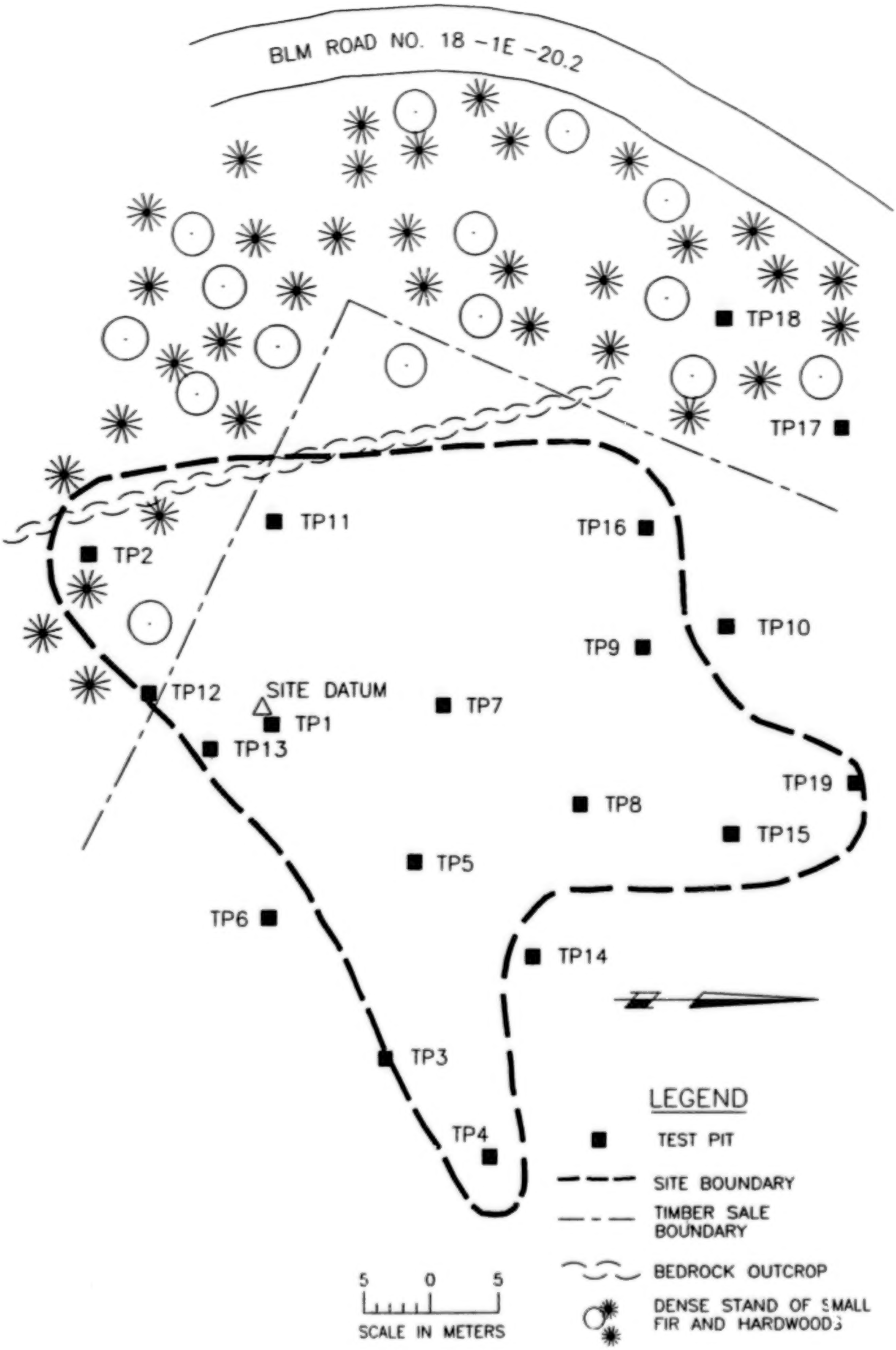

Figure 6.2. Measured sketch map of the Manson site (35LA818).

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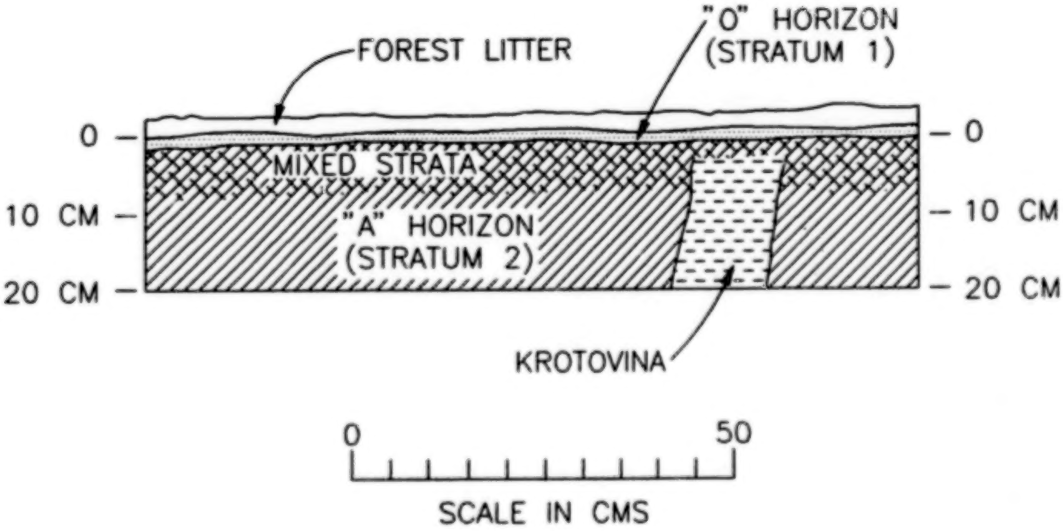

Figure 6.3. Stratigraphic profile, North Wall of test pit 1.

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to say whether unmixed Stratum 2 contains cultural debris or not, but it is evident that the amount of cultural material declines markedly at depths below 10 centimeters from the surface.

DESCRIPTION OF CULTURAL MATERIALS

Sixteen tools and 363 pieces of debitage were recovered from the fourteen test pits located within the site boundary. In addition 265 pieces of cryptocrystalline silicate thermal disaggregation product were recovered. Nodules of cryptocrystalline silicate material occur in soils derived from volcanics throughout the Fall Creek - Little Fall Creek drainage, therefore the CCS thermal disaggregation products may be the natural result of forest fires acting on CCS nodules in the soil.

Eleven tools and 237 pieces (65%) of the recovered debitage are cryptocrystalline silicate material. Four tools and 123 pieces (34%) of debitage are obsidian. The remaining one percent of the debitage consists of two basalt flakes and one welded tuff flake. A single andesite cobble tool was also recovered. Distributional data for tools recovered from the Manson site are presented in Table 6.1. Distributional data for debitage are presented in Table 6.2 and debitage size data are presented in Tables 6.3 and 6.4.

	Bifacially Worked Fragments	Unifacially Worked Fragments	Culturally Modified Flakes	Cobble Tools	TOTAL
Test Pit 1 (0-10 cm)	2	3	2		7
Test Pit 2 (0-10 cm)		1	1	1	3
Test Pit 5 (0-10 cm)		1			1
Test Pit 7 (0-10 cm)			1		1
Test Pit 8 (0-10 cm)			1		1
Test Pit 11 (0-10 cm)	1				1
Test Pit 15 (0-10 cm)			1		1
Test Pit 16 (0-10 cm)	1				1
TOTAL	4	5	6	1	16

Table 6.1. Distribution of tools recovered from the Manson site (35LA818).

Provenience	DEBITAGE TYPE Primary Cortex Flakes		Secondary Cortex Flakes		Interior Flakes		Borken Interior Flakes		Interior Flake Fragments		Angular Waste		Thermally Protected Angular Waste		TOTAL	
Raw Material	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid
Test Pit 1 (0-10 cm)	1		1		23	1	28	2	87	1	2		99		241	4
Test Pit 1 (10-20 cm)					4		6		15				9		34	
Test Pit 2 (0-10 cm)					7	2	6	2	18	1			61		91	5
Test Pit 3 (0-10 cm)						1										1
Test Pit 4 (0-10 cm)							2		5				7		14	
Test Pit 5 (0-10 cm)					1	2		11	6	8		1	12		19	22
Test Pit 6 (0-10 cm)													1		1	
Test Pit 7 (0-10 cm)						6	2	17	3	22			28		33	45
Test Pit 8 (0-10 cm)							1	2	4	5			5		10	7
Test Pit 9 (0-10 cm)						2		1		4			3		3	7
Test Pit 10 (0-10 cm)																
Test Pit 11 (10-20 cm)						2		4		16						22
Test Pit 12 (0-10 cm)									1	1			9		10	1
Test Pit 13 (0-10 cm)									1				11		12	
Test Pit 14 (0-10 cm)																
Test Pit 15 (0-10 cm)			1		1		1	4	1	2			6		10	6
Test Pit 16 (0-10 cm)			1	1	2		2		2				13		18	1
Test Pit 17 (0-10 cm)																
Test Pit 18 (0-10 cm)																
Test Pit 19 (0-10 cm)								2	1				3		4	2
TOTAL	1		2		37	17	47	45	144	60	1	1	267		504	123

*Two basalt interior falkes and one welded tuff interior flake were recovered which are not listed in Table 6.

Table 6.2. Distribution of debitage recovered from the Manson site (35LA818).

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Bifacially Worked Fragments

Two of the items in this category, one obsidian and one CCS, are thin and relatively carefully flaked pieces which appear to be fragments of projectile points or similar carefully crafted finished tools. The other two items are both CCS and appear to be portions of bifaces which were broken and abandoned during a stage of manufacture comparable to Callahan's biface reduction stage 3 (Callahan 1979: Table 1). One of these items displays potlid spalling attributable to exposure to high temperatures.

Unifacially Worked Items and Fragments

Two complete unifaces and three unifacially worked fragments were recovered from test excavations. The complete item is ovate in plan, measures 21mm x 16mm x 5mm, and is flaked around 80% of its circumference. The edge angle of the bit is 70 degrees. The material is CCS. A second CCS item is nearly complete (missing a piece of the convex working edge), has a convex working edge and is flaked around 50% of its circumference. The item measures 25mm x 22mm x 5mm with an edge angle of 55 degrees. Both this and the previous item are made on relatively thin expanding flakes with the working edge formed on the distal end of the flake. The third complete, or nearly complete, item is also made on an expanding CCS flake and has a roughly pentagonal shape. The item measures 29mm x 23mm x 7mm and is worked around 90% of its circumference. One lateral margin is straight to slightly convex and has an edge angle of 60 degrees. The opposite lateral margin is composed of two straight edges which form an obtuse angle of approximately 125 degrees. The edge angles of these two segments are 40 degrees and 85 degrees. The distal end of the flake is fashioned into a shallow concave notch approximately 8mm across. The edge angle within the notch is approximately 70 degrees.

One of the unifacially worked fragments is CCS and the other is obsidian. The CCS item appears to be the bit portion of an end scraper with a short (16mm), thick (5mm), straight bit with an edge angle of 75 to 80 degrees. This item exhibits some thermal spalling. The obsidian item is a short (14mm) segment of a straight working edge with an edge angle of 70 degrees.

Culturally Modified Flakes

The six specimens in this item class are all interior flakes or flake fragments. Four of the specimens exhibit areas of contiguous micro-flake scars at one or more locations on their margins. The other two specimens exhibit areas of crushing on the flake margin. Five of the culturally modified flakes are CCS and the sixth is obsidian.

Cobble Tool

A single cobble tool was recovered from the test excavations. This item is an andesite cobble which has been split and then been unifacially flaked on two margins to form thick, steep angled working edges. Edge angles of the flaked margins measure 70 and 75 degrees. One flaked margin exhibits rounding which may be attributable to use wear. The specimen measures 81mm x 78mm x 47mm. This item closely resembles tools which White (1975: 211 and Figure 14, e - f) termed "scraper planes".

Lithic Debitage

Six classes of debitage are recognized for the purposes of this study: primary cortex flakes, secondary cortex flakes, complete interior flakes, broken interior flakes, interior flake fragments and angular waste. Primary cortex flakes have cortex on 90-100% of the dorsal surface while cortex covers less than 90% of the dorsal surface of secondary cortex flakes. Complete interior flakes are just that --- whole. Broken interior flakes have an intact platform and bulb of force but are not whole, while interior flake fragments are distal fragments lacking the platform and some or all of the bulb of force. Angular waste consists of pieces with four or more facets lacking the attributes of flakes.

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One additional class of items recognized in this study are cryptocrystalline silicate (CCS) thermal disaggregation products. This class of items includes several morphological forms. There are pot lid flakes and there are also pieces with four or more broadly concave and/or convex faces -- some exhibiting points of detatchment near the centers of the broadly curved faces -- and an absence of bulbs of force. The cultural relevance of this item class at the Manson site is not certain. If it could be demonstrated that all CCS material was transported to the site by human agents the item class becomes culturally relevant. However, CCS material in nodular and tabular form is a common material formed by secondary sedimentary processes in the volcanics which make up much of the country rock in the Fall Creek and Little Fall Creek drainages. As the volcanics weather the more resistant CCS remains as nodules in the soil. Nodular CCS was not discovered during excavation nor was any seen in cutbanks or other exposures near the site. Thus it is possible, but not certain, that all CCS discovered at the Manson site was transported there by human agents.

As noted previously, the majority (65%) of the debitage is CCS material. If the thermal disaggregation products are added to the equation 78% of the lithic material (exclusive of tools) recovered from test excavations is CCS.

Only one primary and two secondary cortex flakes (all CCS) were recovered. Apparently, initial reduction of lithic materials was carried out at other locations. The nearest known source of CCS material is located approximately five kilometers to the southwest in the Fall Creek drainage (Sec. 31, T. 18S., R. 1E., Will. Mer.). However, as noted above nodular CCS is a common post depositional product formed in the volcanic rock of the area which remains after the basalts and tuffs weather. Given this, it is highly likely that there are sources of CCS material located closer than five kilometers to the Manson site.

Flake sizes (whole, broken and fragments) of CCS material recovered from test excavations at the Manson site range from 1/2 cm to 5cm along the axis of maximum dimension (see Table 6.3). Eighty-six percent of the items are in the size range encompassed by 6mm and 2cm with the median and the mode falling within the 1cm size class and with a mean size of 1.59cm.

CCS	Debitage Size in cms along axis of maximum dimension							
DEBITAGE TYPE	1/2	1	2	3	4	5	6	TOTAL
Prim. Cort. Flk.		2						1
Sec. Cort. Flk.				1	1			2
Int. Complete	1	21	12	5				39
Int. Broken		22	19	6	1			48
Int. Frag.	6	74	54	10		1		145
Ang. Debris			1		1			2
TOTAL 237	7	117	87	22	3	1		237

Table 6.3. Size distribution of CCS debitage from the Manson site (35LA818).

Flake sizes of obsidian debitage range between 1/2 cm and 3cm along the axis of maximum dimension (see Table 6.4). Eighty-eight percent of the items are in the size range encompassed by 6mm and 2cm with the median and the mode falling within the 1cm size class and with a mean size of 1.33cm.

Obsidian	Debitage Size in cms along axis of maximum dimension							
DEBITAGE TYPE	1/1	1	2	3	4	5	6	TOTAL
Prim. Cort. Flk.								
Sec. Cort. Flk.								
Int. Complete		9	3	3				15
Int. Broken	3	36	9					48
Int. Frag.	4	33	18	4				59
Ang. Debris			1					1
TOTAL 123	7	78	31	7				123

Table 6.4. Size distribution of obsidian debitage from the Manson site (35LA818).

Lithic raw material percentages for the Manson site are similar to those for the Cornucopia site (35LA751), located in the Winberry Creek drainage, with 77.8% CCS and 18.8% obsidian (Southard 1986).

The two sites in the Fall Creek Reservoir project area tested by the University of Oregon for which some data concerning raw material frequencies were published appear to fall to either side of the frequency values present at the Manson site. Debitage from site 35LA32 was "...mostly obsidian..." while 94.5% of the debitage from site 35LA33 was CCS material and 3.3% was obsidian (Cole 1967: 9, 25). A large collection of material (304 tools and 4337 pieces of debitage) obtained through controlled surface collection at the Fall Creek Ridge Number 5 site (35LA275) located on the ridgeline immediately north of site 35LA33 is separable into two horizontally defined components. Debitage in the western component consists of 70% CCS material and 30% obsidian, similar to the Manson site, while the eastern component consists of 60% obsidian and 40% CCS material (data on file with BLM, Eugene District Office).

Sites located farther to the east in the Middle Fork Willamette River watershed for which data derived form excavations are available vary somewhat in the frequency of obsidian present in their assemblages but uniformly include more than 50% obsidian debitage. This fact is illustrated by data from Joe's Peak (35LA626) with 65% obsidian (Winkler 1986: 18), Rigdon Horse Pasture Cave (35LA39) where the percentage of obsidian debitage ranges from a high of 96.1% in stratum A to a low of 53.9% in stratum E with an average of 66.2% for all strata combined (Connolly 1983, Table 3), Buck Creek (35LA297)with 91% obsidian (Baxter 1984: 20), Vine Rockshelter (35LA304) with 84.4% obsidian (Baxter and Connolly 1985, Table 3), Sardine Confluence (35LA539) with 60.9% obsidian (Connolly and Baxter 1983, Table 4), and the Colt Timber Sale sites where the percentages of obsidian range from a high of 87.9% at site 35LA572 to a low of 53.9% at site 35LA574 (Baxter 1983,Table 1).

Within the Middle Fork Willamette watershed assemblages from sites located farther into the central Cascades, and therefore closer to primary obsidian sources, contain high percentages of obsidian but the reverse situation does not always obtain. Sites located in the Cascade foothills towards the west edge of the watershed and therefore at greater distances from a primary obsidian source do not necessarily have assemblages characterized by lower frequencies of obsidian debitage than the more easterly sites. Reasons for the observed variability in lithic raw material frequency may be varied and often complex. They will not be addressed here. For a short but cogent discussion of the phenonenon in general and as it applies to the prehistory of the Middle Fork basin of the Middle Fork Willamette River watershed, and by extension to the current project area, see Connolly (1983: 16, 21-22).

SITE PARAMETERS

1. Site Boundaries

The Manson site consists of a low density lithic scatter covering an area of approximately 1600 square meters. The estimated volume of the cultural deposit ranges between 160 and 240 cubic meters.

2. Depth of Cultural Deposit

Results obtained from the one test pit excavated to a depth greater than 10 centimeters indicate that the cultural bearing deposit appears limited to the uppermost 10 to 15 centimeters of the soil profile except where material is present in the fill of krotovinae.

3. Cultural Features

No cultural features were discovered in the 15 square meters excavated within the site boundaries. However, the excavated area is less than 1% of the total site area and provides no conclusive evidence for the presence or absence of cultural features at the Manson site.

4. Site Integrity

The windthrow salvage entry undoubtedly had some minor effect on the overall integrity of the site as did the clearcutting and reforestation along the south edge of the site have some effect on the southernmost 200 square meters of the site. However, neither of these actions resulted in the removal or destruction of large areas of the cultural deposit. Test excavations have resulted in the destruction of something less than 1% of the cultural deposit. Windthrow and animal burrowing have combined to perturb the shallow deposit at the Manson site to some extent.

5. Density of Cultural Materials

An average density of 237 items/cubic meter was calculated for the total volume of fill excavated within the site boundaries. Using this figure, the site might be expected to yield between 38,000 and 57,500 cultural items if completely excavated. The ratio of tools to debitage is approximately 1 to 22.

FUNCTION AND CHRONOLOGY

Over 95% of the assemblage is debitage. There are only three decortation flakes in the assemblage and the overall flake size is generally smaller than two centimeters along the axis of maximum dimension. These facts are indicative of the maintenance of flaked stone tools or the final stages of tool manufacture using preforms rather than a full range of reduction stages beginning with primary nodules. The limited range of tool types recovered and their generalized nature (68% of the tools are simple unifaces or culturally modified flakes) would seem to point to a site where tasks requiring few or no specialized tools were performed. Perhaps the

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refurbishment of flaked stone tools and simple maintenance of the perishable items intergrally associated with the stone tools would account for this type of assemblage. An example of this type of activity would be the sharpening of stone projectile armature and the smoothing of wooden shafts carrying the armature.

The absence of projectile points or other tool forms with a high degree of temporal specificity precludes assigning the Manson site assemblage to one of the Willamette Basin temporal periods.

SITE POTENTIAL AND SIGNIFICANCE

The cultural deposit at the Manson site has not been extensively disturbed by timber harvest or other modern activities. Windthrow and animal burrowing activities have perturbed this thin cultural deposit to some extent but the site retains a high degree of integrity. However, it is my professional opinion that the deposit lacks sufficient concentration of artifactual material to expect that additional excavation would produce significant new information. I do not consider this site eligible for listing on the National Register of Historic Places.

RECOMMENDATIONS

Harvest of standing and windthrown timber on the site should be permitted. Leaving this small patch of trees unharvested would only accelerate windthrow which is already a problem in the stand and increase damage to the site. However, in order to avoid undue disturbance of the shallow deposit tractor yarding of felled timber and post-harvest machine piling of slash will be prohibited within the site boundaries. To this end a special yarding and site treatment area has been posted on the ground and will be delineated on the exhibit "A" map in the sale folder. The posted area includes the site and a small buffer zone. Felled timber will be yarded to an old landing adjacent to the site on road number 18-1E-20.2 using a mobile yarder.

REFERENCES CITED

Baxter, Paul W.

1983 The Colt Timber Sale Project: an archaeological investigation of six sites in the upper Middle Fork of the Willamette River Valley. Report to the Rigdon Ranger District of the Willamette National Forest by the Department of Anthropology, University of Oregon.

1984 The Buck Creek site (35LA297): an archaeological evaluation. Report to the Rigdon Ranger District of the Willamette National Forest by the Department of Anthropology, University of Oregon.

1986 Archaic upland adaptations in the central Oregon Cascades. Ph.D. dissertation, Dept. of Anthropology, Univ. of Oregon.

Baxter, Paul W., and Thomas J. Connolly

1985 Vine Rockshelter: A report of excavations at an intermittent hunting camp in the Western Cascades. A report to the Rigdon District, Willamette National Forest by Baxter and Connolly, Archaeological Data Consultants.

Beckham, Stephen Dow

1976 Indian distribution in Oregon. In Atlas of Oregon, edited by William G. Loy, pp. 6-7. University of Oregon Books, Eugene, Oregon.

Beckham, Stephen Dow, Rick Minor and Kathryn Anne Toepel

1981 Prehistory and history of BLM lands in west-central Oregon: a cultural resource overview. University of Oregon Anthropological Papers 25.

Callahan, Errett

1979 The basics of biface knapping in the Eastern fluted point tradition: a manual for flintknappers and lithic analysts. Archaeology of Eastern North America, Vol. 7, No. 1.

Cole, David L.

1967 Archaeology of the Fall Creek Dam Reservoir. Final Report. The Museum of Natural History, University of Oregon.

Connolly, Thomas J.

1983 Lithic debitage and raw materials. In Rigdon's Horse Pasture Cave: an upland hunting camp in the western Cascades, by Paul w. Baxter, richard D. Cheatham, Thomas J. Connolly and Judith A. Willig. University of Oregon Anthropological Papers 8:13-23.

and Paul W. Baxter

1983 The site at Sardine Confluence: an archeological investigation. Report to the Willamette National Forest. B.C./A.D. Report No. 1.

Franklin, Jerry F., and C.T. Dyrness

1973 Natural vegetation of Oregon and Washington. U.S.D.A. Forest Service General Technical Report PNW-8.

Newman, Thomas M.

1966 Cascadia Cave. Occasional Papers of the Idaho State University Museum 18.

Southard, Michael D.

1986 An archaeological evaluation of the Cornucopia site (35LA751), Lane County, Oregon. Report on file with the Bureau of Land Management, Eugene District Office.

Toepel, Kathryn Anne and Stephen Dow Beckham

1981 Ethnographic overview. In Prehistory and history of BLM lands in west-central Oregon: a cultural resource overview, by Stephen Dow Beckham, Rick Minor and Kathryn Anne Toepel. University of Oregon Anthropological Papers 25:41-115.

White John R.

1975 The Hurd site. In Archaeological Studies in the Willamette Valley, Oregon, edited by C. Melvin Aikens. University of Oregon Anthropological Papers 8:141-225.

Winkler, Carol J.

1986 The Joe's Peak II Site (35LA626) -- Determination of Eligibility. Lowell Ranger District, Willamette National Forest.

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An Archaeological Evaluation of the Vacuum Site (35LA875) Lane County, Oregon

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Bureau of Land Management
Eugene District

February, 1990

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ABSTRACT

Limited test excavations at the Vacuum site (35LA875) located in the Camp Creek drainage of the McKenzie River watershed have demonstrated that the site is a single component, low density lithic scatter (46 artifacts/cubic meter) where a limited number of tasks including resharpening or maintenance of flaked stone tools were performed.

The site covers an area of 4700 square meters and has a cultural deposit measuring between 500 and 700 cubic meters which is limited to the upper 15 centimeters of the soil profile. The cultural deposit has an average artifact density of 46 items/cubic meter with a tool to debitage ratio for the excavated sample of approximately 1:21. No bone or other perishable material was recovered from the excavated deposit. Evidence of extensive rodent burrowing was recorded in test pit profiles while scattered uprooted tree stumps attest to past windthrow. Both burrowing and windthrow have combined to perturb the thin cultural deposit and so destroy its overall integrity.

The site is assigned to the Willamette Basin Late Archaic period (O - 1750 A.D.) on the basis of a single marrow-necked projectile point recovered from Test Pit 4.

The deposit Is judged to lack integrity and to lack sufficient concentration of artifactual material to expect that further excavation of the site would yield significant new knowledge. The Vacuum site is determined to be ineligible for listing on the National Register of Historic Places.

INTRODUCTION

The Vacuum site (35LA875) is located in the McKenzie Resource Area of the Eugene District, Bureau of Land Management. The site covers an area of approximately 4700 square meters. The cultural deposit may be characterized as a low density lithic scatter with cultural material confined to the upper 10 - 15 cm of the soil profile except where material is present in the fill of krotovinae. Artifactual material recovered consists entirely of lithic debitage and flaked artifacts. The site is situated in an uneven aged stand of timber with a moderate to sparse shrub/hardwood understory and moderate to dense ground cover.

One or more selective harvest operations designed to salvage dead and windthrow timber have been conducted in the stand during the past 30 years. Scattered large stumps surrounded by small patches of 10-30 year old conifers provide the only direct evidence for these timber salvage operations. The stand is scheduled for final harvest (clear cutting) in the near future.

The purpose of the project reported here was to document the horizontal and vertical limits of the Vacuum site cultural deposit, the extent to which the site's integrity has been disturbed and to evaluate the site's archaeological significance in terms of its eligibility for inclusion on the Natural Register of Historical Places.

LOCATION AND NATURAL SETTING

The Vacuum site is situated on the lower third of the south aspect slope of the west-trending ridgeline between Cartwright Creek to the north and Camp Creek to the southeast. Located approximately 16 kilometers northeast of the city of Springfield, Oregon (SW1/4SEl/4, Sec. 33, T.16S., R.1W., Willamette Meridian) the site occupies the crest of a south-trending spur ridge at an elevation of 341 meters a.s.l. some 147 meters above and 1300 meters north of the Camp Creek valley floor (Figure 7.1.). Wegner Creek, a perennial tributary of Camp Creek, is located approximately 100 meters east of the site.

Bedrock in the site area consists of late Oligocene to early Miocene age tuffs, welded tuff and tuff breccias intercalated with basalt flows and mid-Miocene age basalt flows (U.S. Department of the Interior 1961). Cryptocrystalline silicates formed by secondary sedimentary processes occur in nodular and tabular form in the Oligocene-Miocene pyroclastics. Free nodules of CCS material may be found in the upper portions of soil profiles at various locations in the Western Cascades including the immediate vicinity of the Vacuum site. Soils developing on the pyroclastics and basalt flows are generally deep to moderately deep silty clays and silty clay loams. The soil within the site area is Bellpine silty clay loam (U.S. Department of Agriculture 1987).

Situated within the coniferous forest community of the Western Oregon Interior Valley Vegetation Zone the stand of timber within which the site is located contains three easily recognizable coniferous components (Franklin and Dyeness 1973). Scattered throughout the stand are a few three-to-four hundred year old Douglas-firs with open grown characteristics. These trees represent the forest cover prior to the control of fire, either wildfire or fire of an anthropogenic nature, within the area. Douglas-fir and western hemlock averaging 100 years in age constitute the second and major component of the stand. Scattered throughout the stand are small, dense patches of 10 to 30 year old Douglas-fir reproduction which have sprung up where old growth trees have died or blown down creating openings in the canopy. These patches of Douglas-fir reproduction along with individual young trees of shade tolerant western hemlock and grand fir which are scattered throughout the stand constitute the third component within the stand. Specimens of big leaf maple, vine maple, western dogwood, buckthorn cascara and an occasional Oregon white oak sapling with black cottonwood and red alder along nearby Wegner Creek make up the hardwood component within the stand. Shrubs within the stand area include salal, Oregon grape, beaked hazel, evergreen huckleberry, trailing blackberry, snowberry, sword fern and poison oak.

ARCHAEOLOGICAL AND ETHNOGRAPHIC BACKGROUND

At present, the locations of 41 "valley edge" and/or foothill sites have been recorded in the Mohawk River drainage and the adjacent Camp Creek drainage to the east. The 41 sites include four with Early Archaic point styles, eight with Middle Archaic point styles, and 13 with Late Archaic point styles. Assemblages from 16 sites lack temporally sensitive artifact types. Of the thirteen sites which have produced Late Archaic projectile points three are located on private property and the remaining ten are located on lands administered by the Bureau of Land Management. Limited test excavations have been performed at three of the BLM-administered sites, Mill King (35LA805), Crack Shot (35LA848) and Lalone Ranger (35LA874). The results of the test excavations at Mill King and Crack Shot were documented in the recent past (Southard 1987, 1989). An interim report documenting the results of the test excavations conducted to date at the Lalone Ranger site is in progress. (Note: additional test excavations at 35LA874 will be conducted during 1991 to ascertain site boundaries.) The Halverson site (35LA261) was extensively excavated by the University of Oregon archaeological field school crew during 1977 and a report documenting the results of the excavations was written shortly thereafter (Minor and Toepel 1980). Information on the other 9 Late Archaic sites within the area of consideration consists of data relating to location/environmental setting and artifact assemblage as determined by surface collection.

The Beebe site (35LA216), although proximal to the main Willamette Valley some 15 kilometers to the west of the Vacuum site, is another extensively excavated Late Archaic period "valley edge" site which functioned as a support site for hunting activities and for the maintenance of the lithic tool kit associated with hunting and butchering tasks (Follansbee 1975: 423).

The Halverson site was determined to be a single component site occupied within the last several hundred years which was used as a seasonal hunting camp where game was processed and hunting paraphernalia were maintained (Minor and Toepel 1980: 12-13).

Both the Mill King and Crack Shot sites appear to be single component sites. The Mill Creek assemblage is assignable to the Late Archaic period; however, the Crack Shot assemblage lacks temporally sensitive tool forms. Activities at both sites appear to have centered around hunting and the maintenance of lithic tool kits associated with hunting. The cobble tools recovered at the Crack Shot site (Southard 1989: 7) may represent heavy-duty butchering tools or they may have been used for woodworking tasks. The latter is a function for this tool class which was initially suggested by White (1975b: 211).

The Vacuum site as well as the Halverson, Mill King and Crack Shot sites are located within the former territory

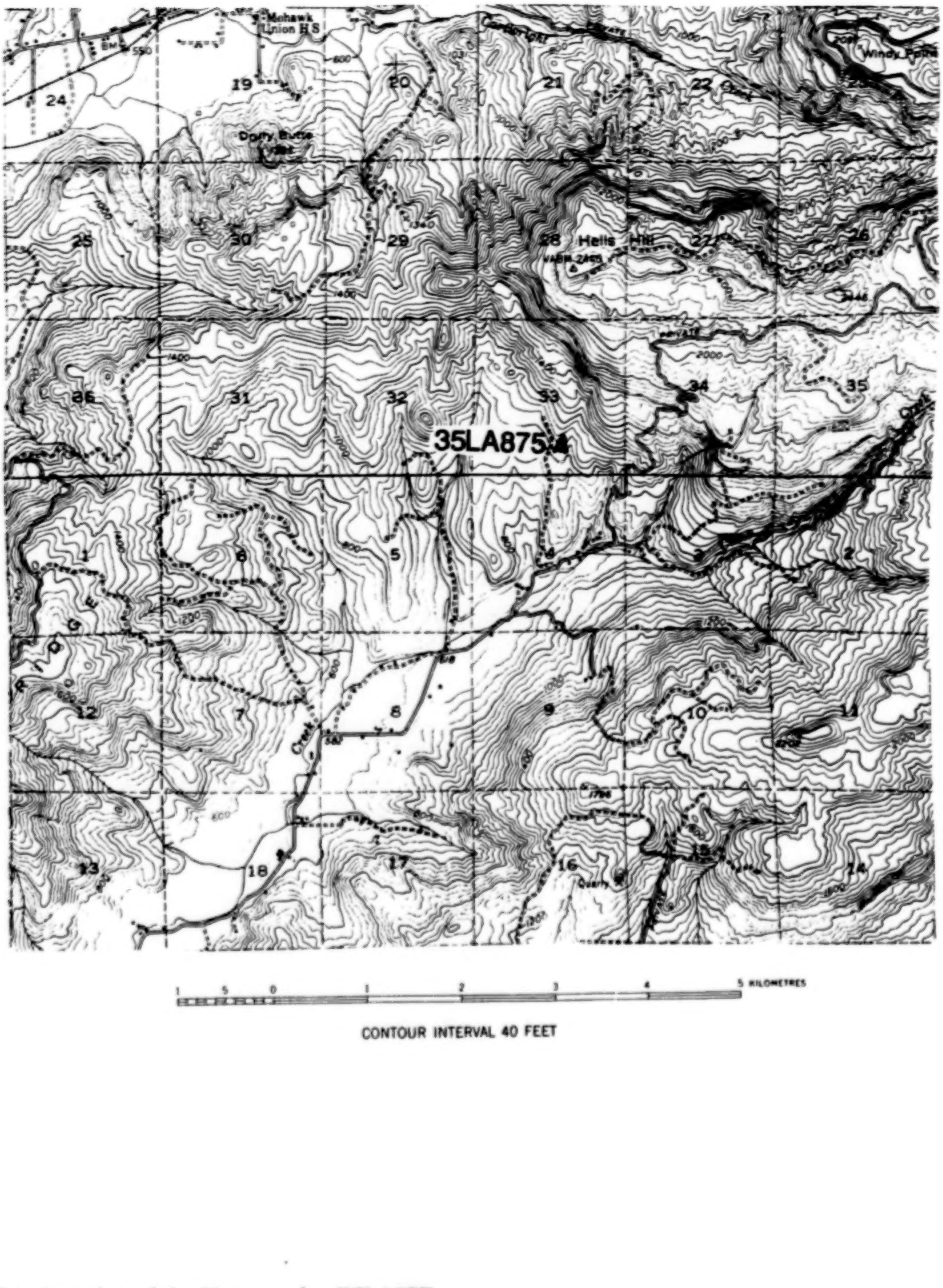

Figure 7.1. Location of the Vacuum site (35LA875).
Base Map: U.S.G.S. Marcola, Ore. 15' quadrangle sheet, 1950 ed.

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of the Mohawk band of the Kalapuya. The Beebe site is situated in the former territory of the Chafan band of the Kalapuya (Beckham 1976, Toepel and Beckham 1981: 57-58). A summary of the prehistory and ethnography of the southern Willamette Valley and the adjacent uplands may be found in the Cultural Resource Overview of the Bureau of Land Management's Eugene District (Beckham, Minor and Toepel 1981:41 - 95, 117 176). An updated overview of the ethnography and prehistory of the Western Cascades may be found in the work Cultural Resource Overview of the Willamette National Forest: A 10-Year Update (Minor, et al 1987).

FIELD PROCEDURES

A few pieces of lithic debitage discovered in duff scrapes cleared during a January, 1989 presale cultural resource survey conducted in support of the Eugene District's timber sale program presaged the eventual definition of the Vacuum site. Eventually, a series of twenty-eight 1 X 1 meter test pits were excavated in order to define the horizontal and vertical limits of the site and to gain some knowledge concerning the amount and variety of cultural material present. Test pits 1 through 15 (excepting Test Pit 6 and 9) were excavated to a depth of 20 centimeters below the soil surface in two 10 cm levels. Test pit 6 was excavated to a depth of 15 centimeters below surface in one 10 cm level and one 5 cm level and test pit 9 was excavated to a depth of 25 cm in two 10 cm levels and a single 5 cm level. Test pits 16 through 28 were excavated to a depth of 15 cm below the soil surface in one 10 cm and one 5 cm level. Soil strata were excavated and processed separately in all cases where the strata were sufficiently well defined so as to permit recognition and separation in the horizontal plane. All excavated soil was processed through a one-quarter inch mesh screen. Two-thirds of the processed soil from each level/stratum was then processed through a one-eighth inch mesh screen. Test pits 22, 26 and 28 yielded no cultural material and are judged to lie outside of the site boundaries.

Following excavation a topographic map of the site area was made utilizing a transit and stadia rod. In addition to the topography within the site area the map shows the location of test pits and the site boundary (Figure 7.2).

STRATIGRAPHY

The stratigraphy at the Vacuum site did not differ significantly from that recorded at other upland lithic scatters excavated in the Western Cascades portion of the Eugene District: an "O" horizon consisting of a thin, dark colored layer of organic material in various stages of decomposition was underlain by an "A" horizon mineral soil. The upper portion of the "A" horizon contains humic compounds which, along with the physical admixture of "O" horizon material, impart a distinctly darker color to this part of the profile. Separating the upper and lower portions of the "A" horizon is a mixed zone attributable to krotovination. Beneath the mixed zone the "A" horizon soils are characterized by colors with hues which are closer to red, values which may be higher (never lower) than the "A" horizon above the mixed zone and chromas which are greater than those of the upper portion of the "A" horizon. Krotovinae are common and easily discerned in both plan and profile below, and sometimes within, the level of the darker colored "A" horizon material. Partially weathered parent material (pyroclastics and/or basaltic rock) and secondary sedimentary process products (crypto-and-macrocrystalline silicates and petrified wood) are present in varying amounts depending upon location and depth.

Stratum 1. Readily measurable amounts of stratum 1 were not present in all units. Where present in measurable amounts it consists of a 1 to 2 centimeter layer of silt loam with a very high organic content. The color is very dark grayish brown (10YR3/2, moist). Partially decayed fir needles, etc. and small fragments of charcoal are present in this "O" horizon soil.

Stratum 2. Stratum 2 is silty clay loam with a crisp texture and a slightly blocky structure. The color is reddish brown (5YR4/4, moist) with dark brown (7.5YR4/2, moist) mottles. Small fragments (1 to 2 cm size) of partially weathered parent material are present throughout the stratum. Small fragments of charcoal were also noted in this stratum in all test pits.

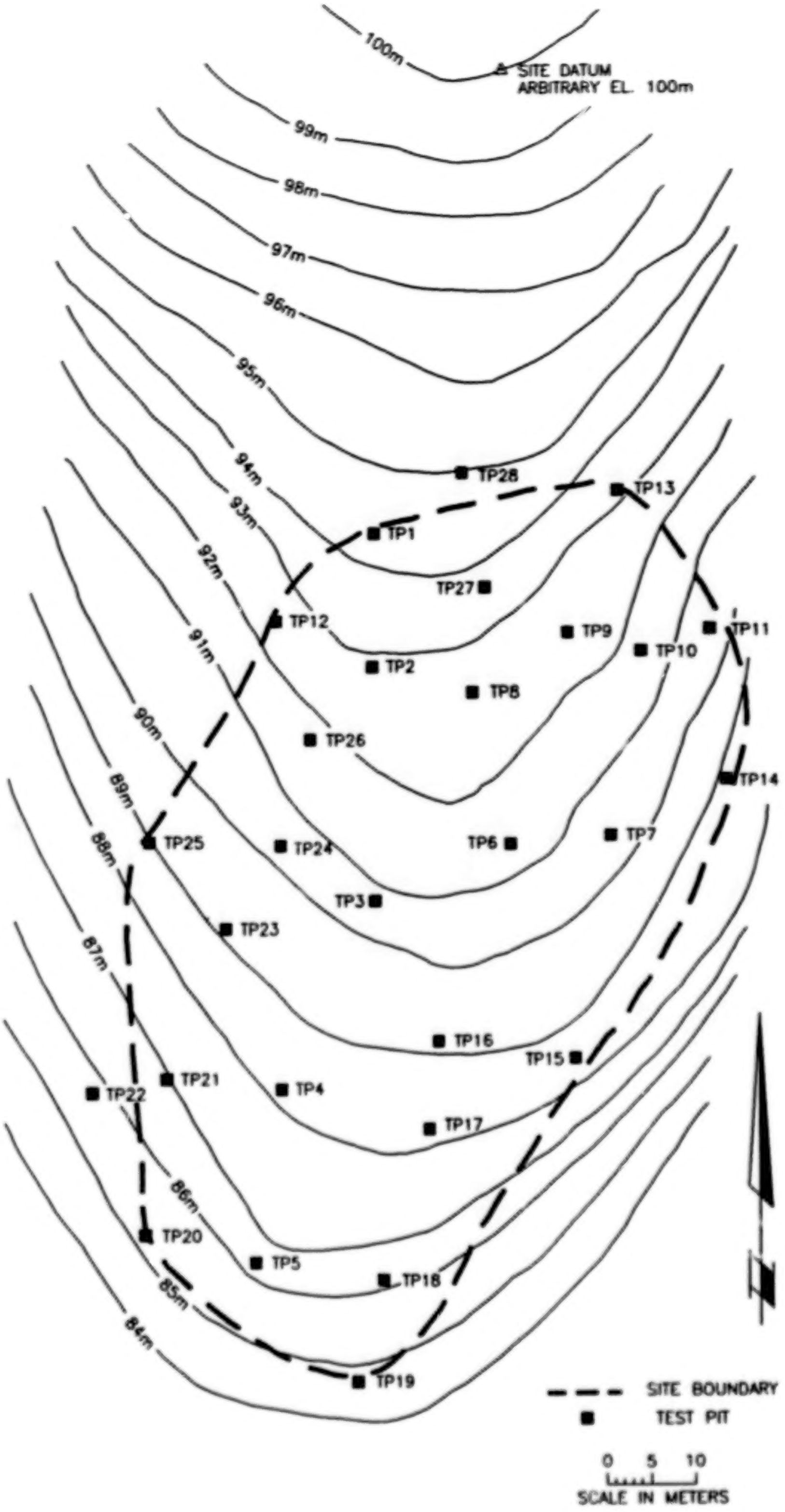
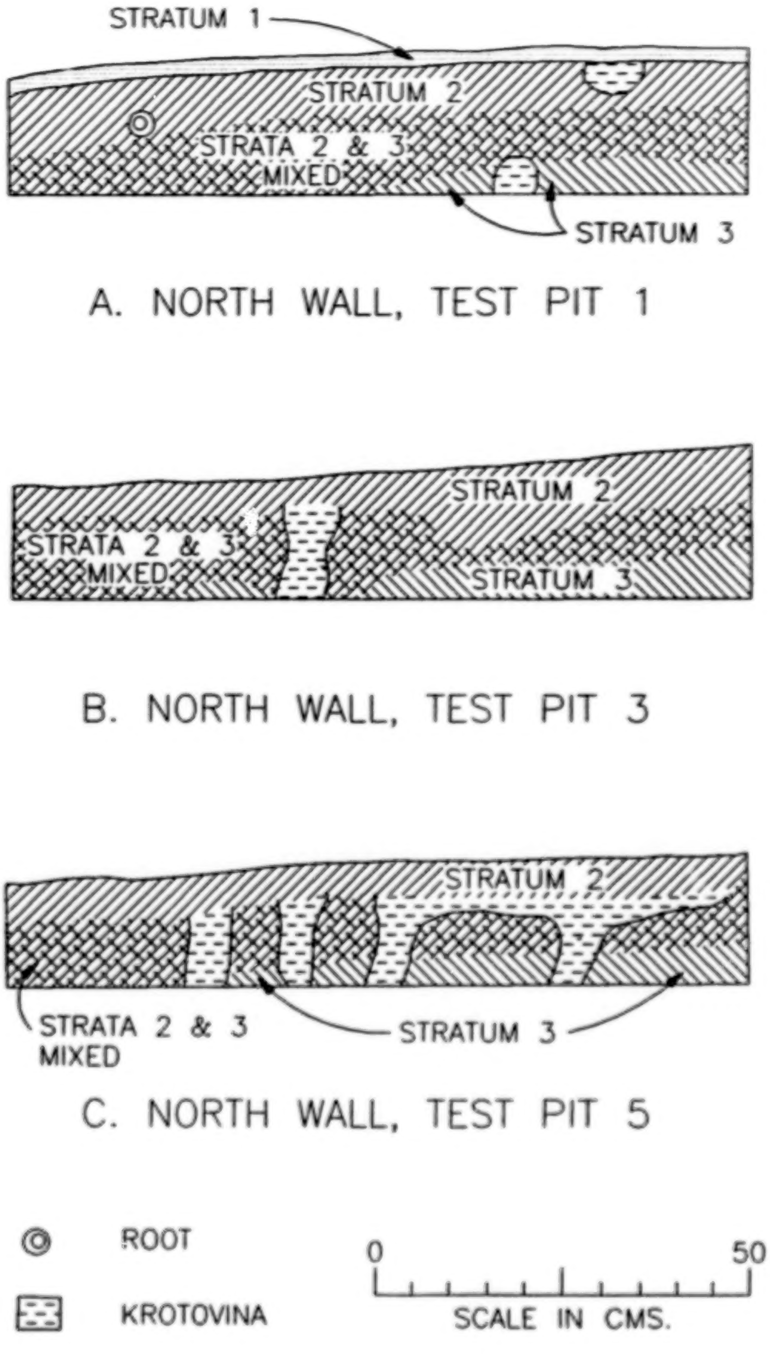


Figure 7.2. Vacuum site (35LA875).

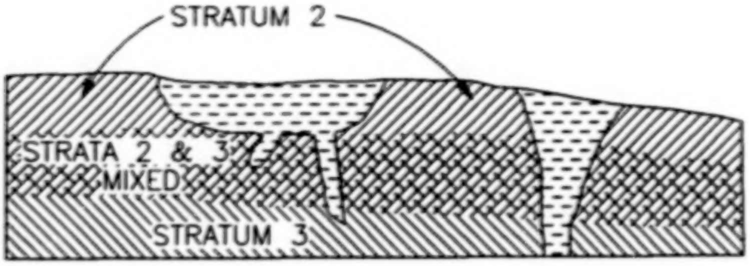


A. NORTH WALL, TEST PIT 1

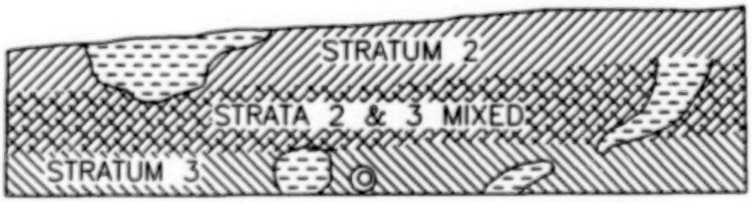
B. NORTH WALL, TEST PIT 3

C. NORTH WALL, TEST PIT 5

Figure 7.3. Vacuum site profiels, test pits 1, 3, and 5.



A. NORTH WALL, TEST PIT 9.



B. WEST WALL, TEST PIT 9.

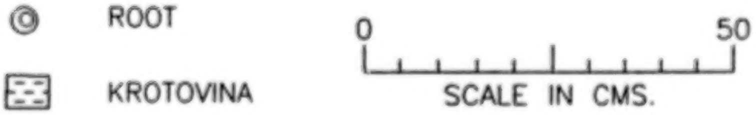


Figure 7.4. Vacuum site profiles, test pit 9.

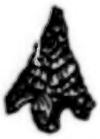


Figure 7.5. Projectile point recovered from the Vacuum site (actual size).

Stratum 2 as defined here corresponds to the humic-rich upper portion of the "A" horizon soil. Some krotovinae are discernable in stratum 2. A mixed zone as much as 5 to 7 centimeters thick and having some characteristics of both stratum 2 and the underlying stratum 3 separates stratum 2 from stratum 3. This mixed zone occurred in all test pits. Small fragments of charcoal were scattered throughout the mixed zone. Krotovinae were readily discernable in both plan and profile in this zone.

Stratum 3. Stratum 3 is a clay loam to silty clay loam containing fragments of weathered pyroclastic material ranging between 1 and 10 centimeters in size. The color is dark red (2.5YR3/6, moist). Charcoal fragments were absent from this stratum. Stratum 3, as defined here, corresponds to an "A" horizon soil below the humic-rich layer although this stratum also has some characteristics of a "B" horizon. See Figures 7.3A, B, C and Figures 7.4A and B for Illustrations showing the stratigraphy of the upper soil profile.

Cultural Stratigraphy. Stratum 1 was excavated and processed as a separate unit only in test pits 1, 8 and 9. No cultural material was recovered from this stratum in these three instances. Lithic debitage and tools were recovered from stratum 2 and from the mixed strata zone underlying stratum 2. However, the amount of cultural material recovered from the mixed layer in levels deeper than 10 cm below the surface dropped off markedly. In some test pits no cultural debris was recovered in levels deeper than 10 cm below the surface. No cultural material was recovered from stratum 3 in any test pit where unmixed stratum 3 was excavated. This evidence clearly indicates that the cultural deposit (except where present in deeply penetrating krotovinae) is limited to stratum 2 and the mixed zone. The presence of cultural debris in the mixed zone may be due to the cultural debris carried into this zone with the stratum 2 fraction. Whether or not this is the case, the amount of cultural material present in the deposit drops off markedly at depths greater than 10 centimeters below the surface.

DESCRIPTION OF CULTURAL MATERIALS

Eight tools and 168 pieces of debitage were recovered from the twenty-five test pits located within the site boundary. In addition, 262 pieces of thermal disaggregation product (256 CCS, 4 basalt, 1 welded tuff) were recovered. Because cryptocrystalline silicates, basalt and welded tuff occur in many soils derived from pyroclastics throughout the Western Cascades these thermal disaggregation products may be the result of forest fires acting on naturally occurring material in the soil.

Four tools and 84 pieces (50.0%) of the recovered debitage are cryptocrystalline silicate material. Four tools and 75 pieces (44.6%) of the recovered debitage are obsidian. The remaining 5.4% of the recovered debitage consists of six basalt flakes and three welded tuff flakes. Distributional data for tools recovered from the Vacuum site are presented in Table 7.1. Distributional data for debitage are presented in Table 7.2 and debitage size data are presented in Tables 7.3, 7.4, and 7.5.

	Projectile Point	Bifacially Worked Fragments	Unifacially Worked Fragments	TOTAL
Test Pit 2 Level 1			1	1
Test Pit 3 Level 2		1		1
Test Pit 4 Level 1	1			1
Test Pit 6 Level 1			1	1
Test Pit 9 Level 1		1		1
Test Pit 11 Level 1			2	2
Test Pit 27 Level 1		1		1
TOTAL	1	3	4	8

Table 7.1. Distribution of tools recovered from the Vacuum site (35LA875).

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Provenience	DEBITAGE TYPE Primary Cortex Flakes		Secondary Cortex Flakes		Interior Flakes		Broken Interior Flakes		Interior Flake Fragments		Angular Waste		Thermally Protected Angular Waste		TOTAL	
Raw Material	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS		CCS	Obsid
Test Pit 1 (0-10 cm)													1,1*			
Test Pit 1 (10-20 cm)								1	2				1		2	1
Test Pit 2 (0-10 cm)							1*	1	1,1*	3			10		1,2*	4
Test Pit 2 (10-20 cm)					1			1					6		1	1
Test Pit 3 (0-10 cm)							1,1@	3	2	2			6		3,1@	5
Test Pit 3 (10-20 cm)													4			
Test Pit 4 (0-10 cm)			1@				1		1	1			7		2,1@	1
Test Pit 4 (10-20 cm)										2			2			2
Test Pit 5 (0-10 cm)									1				2		1	
Test Pit 5 (10-20 cm)											1				1	
Test Pit 6 (0-10 cm)					1			1	1	3			10		2	4
Test Pit 6 (10-15 cm)							1	1							1	1
Test Pit 7 (0-10 cm)													2			
Test Pit 7 (10-20 cm)								1					4			1
Test Pit 8 (0-10 cm)						1	2	3	3		1		16		6	4
Test Pit 8 (10-20 cm)								1		1			2			2
Test Pit 9 (0-10 cm)					2			1	6	1	1		6		9	2
Test Pit 9 (10-20 cm)						1			1				7		1	1
Test Pit 9 (20-25 cm)									7							
TOTAL																

Table 7.2. Distribution of debitage recovered from the Vacuum site (35LA875).

DEBITAGE TYPE

Provenience	Primary Cortex Flakes		Secondary Cortex Flakes		Interior Flakes		Broken Interior Flakes		Interior Flake Fragments		Angular Waste		Thermally Protected Angular Waste		TOTAL	
Raw Material	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS		CCS	Obsid
Test Pit 10 (0-10 cm)			1@			1	2		2	2			4		4,1@	3
Test Pit 10 (10-20 cm)							1	1	1	1			3		2	2
Test Pit 11 (0-10 cm)						1	1	5	1,1@	6			2		2,1@	12
Test Pit 11 (10-20 cm)					1@					2			3		1@	2
Test Pit 12 (0-10 cm)					1								3		1	
Test Pit 12 (10-20 cm)													1@			
Test Pit 13 (0-10 cm)			1						1	1			3		2	1
Test Pit 13 (10-20 cm)								1					4			1
Test Pit 14 (0-10 cm)								1					4			1
Test Pit 14 (10-20 cm)			1				1	2					1		2	2
Test Pit 15 (0-10 cm)								2		1			8			3
Test Pit 15 (10-20 cm)																
Test Pit 16 (0-10 cm)							1	1	2	1			15		3	2
Test Pit 16 (10-15 cm)								1					1			1
Test Pit 17 (0-10 cm)							1	1	1	1			8		2	2
Test Pit 17 (10-15 cm)										1			3			1
Test Pit 18 (0-10 cm)								1					9			1
Test Pit 18 (10-15 cm)																
Test Pit 19 (0-10 cm)							1								1	
Test Pit 14 (10-20 cm)																

Table 7.2. (cont'd)

DEBITAGE TYPE

Provenience	Primary Cortex Flakes		Secondary Cortex Flakes		Interior Flakes		Broken Interior Flakes		Interior Flake Fragments		Angular Waste		Thermally Protected Angular Waste		TOTAL	
Raw Material	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS	Obsid	CCS		CCS	Obsid
Test Pit 20 (0-10 cm)										1			5			1
Test Pit 20 (10-15 cm)																
Test Pit 21 (0-10 cm)					1		10	1	9,1@				17		20,1@	1
Test Pit 21 (10-15 cm)									1				1		1	
Test Pit 22 (0-10 cm)																
Test Pit 23 (0-10 cm)			1*				1	2	1	2			12		2,1*	4
Test Pit 23 (10-15 cm)	1														1	
Test Pit 24 (0-10 cm)						1	1	1		2			5,1@		1	4
Test Pit 24 (10-15 cm)									1						1	
Test Pit 25 (0-10 cm)									1	1			6		1	1
Test Pit 25 (10-15 cm)													1@			
Test Pit 26 (0-10 cm)													4			
Test Pit 27 (0-10 cm)			1@				3	1	5				36,2@		8,1@	1
Test Pit 27 (10-15 cm)									1				4		1	
Test Pit 28 (0-10 cm)													8			
TOTAL	1		2,1*, 3@		6,1@	5	28,1*, 1@	36	44,1* 2@	35	3		256, 1*,5@		84,3* 6@	75

*welded tuff
@basalt

Table 7.2. (cont'd)

Projectile Point

A single projectile point was recovered from the Vacuum site (Fig. 5). The specimen is a small basal-notched point with a contracting stem and slightly concave lateral margins. The specimen is 14.7 mm long, 11 mm wide, has a thickness of 2.5 mm and a stem width of 2.8 mm. The specimen weighs 0.2 gm. The material is CCS. This specimen bears close resemblance to specimens included in White's Type 8 (1975a:126-127) and Sanford's Type 11 (1975a: 256 and Figure 7). Recently, both types have been subsumed under Toepel's Type NN3 (1985: 101-102).

Bifacially Worked Fragments

Three specimens from this item class were recovered at the Vacuum site. Two of the specimens were manufactured from CCS material and the third from obsidian. All three specimens exhibit carefully controlled flaking but are too small to provide other diagnostic characteristics.

Unifacially Worked Fragments

All four items in this category are thin pieces with areas of continuous flaking on one or more margins. The pieces are too thin to provide meaningful edge angle measurements. Three of these items are obsidian and the fourth is CCS material.

Lithic Debitage

Six classes of debitage are recognized for the purposes of this study: primary cortex flakes, secondary cortex flakes, complete interior flakes, broken interior flakes, interior flake fragments and angular waste. Primary cortex flakes have cortex on 90-100% of the dorsal surface while cortex covers less than 90% of the dorsal surface of secondary cortex flakes. Complete interior flakes are just that --- whole. Broken interior flakes have an intact platform and bulb of force but are not whole, while interior flake fragments are distal fragments lacking the platform and some or all of the bulb of force. Angular waste consists of pieces with four or more facets lacking the attributes of flakes.

One additional class of items recognized in this study are thermal disaggregation products. These are primarily cryptocrystalline silicates (CCS) but may include specimens of basalt and welded tuff. This class of items includes several morphological forms. There are pot lid flakes and there are also pieces with four or more broadly concave and/or convex faces -- some exhibiting points of detachment near the centers of the broadly curved faces -- and an absence of bulbs of force. Morphologies are not so clearly defined in basalts as they are in cryptocrystalline silicates and welded tuffs. The cultural relevance of this item class is doubtful. Cryptocrystalline silicate in nodular and tabular form is a common material formed during secondary sedimentary processes in the volcanic rocks which make up much of the country rock in the Western Cascades.

Only one primary decortation flake (CCS) and five secondary decortation flakes (2 CCS, 2 basalt and 1 welded tuff) were recovered indicating that most primary reduction of lithic materials occurred elsewhere. Cryptocrystalline silicates occur as waterworn cobbles in the gravels along Camp Creek and Ray Creek (a Camp Creek lateral tributary) within 1 to 2 kilometers of the Vacuum site. Nodular CCS also occurs at a number of locations in the foothills of the Western Cascades. The nearest known outcrops of nodular CCS are located 5½ kilometers to the north in the Mill Creek drainage and a similar distance to the south on the ridgeline along the north side of the McKenzie River valley.

Six CCS and eight obsidian bifacial thinning flakes were recovered from the test excavations. Apparently, bifacial reduction and/or the repair or resharpening of bifacial tools were not commonly performed tasks at the Vacuum site.

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Flake sizes (whole, broken and fragments) of CCS material recovered from test excavation units range from <1/2 cm to 4 cm along the axis of maximum dimension (see Table 7.3). Eighty-three percent of the CCS debitage is within the size range encompassed by 1 mm and 2 cm with the median and the mode falling within the 2 cm size class.

CCS	Debitage Size in cms along axis of maximum dimension							
DEBITAGE TYPE	1/2	1	2	3	4	5	6	TOTAL
Prim. Cort. Flk.			1					1
Sec. Cort. Flk.				2				2
Int. Complete		3	1	2				6
Int. Broken	1	11	10	4	2			28
Int. Frag.	1	18	2	1				44
Ang. Debris			2	1				3
TOTAL 84	2	32	11	3				84

Table 7.3. Size distribution of CCS debitage from the Vacuum Site (35LA875).

NOTE: 3 pieces of welded tuff debitage and 6 pieces of basalt debitage complete the debitage assemblage recovered from the Vacuum site.

Flake sizes (whole, broken and fragments) of obsidian material recovered from test excavation units range from <1/2 cm to 3 cm along the axis of maximum dimension (see Table 7.4). Eighty percent of the obsidian debitage is within the size range encompassed by 1 mm and 1 cm with the median and the mode failing within the 1 cm size class.

Basalt debitage from the Vacuum site ranges between 1.1 cm and 5 cm in size and the welded tuff debitage between 6 mm and 2 cm.

Obsidian	Debitage Size in cms along axis of maximum dimension							
DEBITAGE TYPE	1/2	1	2	3	4	5	6	TOTAL
Prim. Cort. Flk.								
Sec. Cort. Flk.								
Int. Complete		4	1					5
Int. Broken	1	29	6					36
Int. Frag.	3	23	7	1				34
Ang. Debris								
TOTAL 75	4	56	14	1				75

Table 4. Size distribution of obsidian debitage from the Vacuum site (35LA875).

As noted previously, 50% of the debitage from the Vacuum site is CCS material, approximately 45% is obsidian and 5% consists of basalt and welded tuff. Collections from nineteen sites in the Camp Creek drainage include debitage. Of these nineteen sites thirteen have collections characterized by CCS debitage frequencies of 50% or less while six sites have collections characterized by more than 50% CCS debitage. Collections from sixteen sites in the adjacent Mohawk drainage contain debitage. Of these sixteen sites thirteen have debitage collections characterized by CCS debitage frequencies greater than 50% and only three sites have collections with CCS debitage frequencies of 50% or less. Assemblage age was not considered a factor in these observations as the temporally placed assemblages were about equally divided as to apparent age and number between the two drainages. In order to test the apparent relationship between drainage and use of CCS as a raw material a contingency table was constructed and a Chi-square value was calculated (see Table 7.5). A Chi-square value of 8.4 with 1 d.f. was obtained. The null hypothesis that site location (Camp Creek or Mohawk drainage) is independent of lithic raw material usage as expressed by the frequency of lithic debitage material is rejected at a confidence level of P<.005.

	Site Location		
Debitage Frequency	Mohawk River	Camp Creek	
>50% CCS	13 (8.7)	6 (10.3)	19
<50% CCS	3 (7.3)	13 (8.7)	16
16	16	19	35

$X^2=8.4$
d.f.=1
P<.005

Table 7.5. Contingency table, site location vrs. frequency of CCS debitage.

A tentative explanation for the relationship between Camp Creek locations and assemblages characterized by relatively higher frequencies of obsidian debitage may be the overall proximity of the Camp Creek drainage sites to the McKenzie River with its obsidian cobble bearing gravels when compared to the Mohawk drainage sites used in the calculation. Mohawk drainage sites included no sites from locations within the lower four miles of the drainage basin while all sites from the Camp Creek drainage are from locations within the lower 5 miles of that drainage basin.

SITE PARAMETERS

1. Site Boundaries

The Vacuum site consists of a low density lithic scatter covering an area of approximately 4700 square meters. The estimated volume of the cultural deposit is between 500 and 700 cubic meters.

2. Depth of Cultural Deposit

The cultural deposit is limited to the uppermost fifteen centimeters of the soil profile except where material is present in the fill of krotovinae.

3. Cultural Features

No cultural features were discovered in the 25 square meters excavated within the site boundaries. However, the shallow nature of the cultural deposit coupled with the forested nature of the setting very likely precludes the preservation of cultural features.

4. Site Integrity

Although there is evidence for one or more timber salvage entries in the stand containing the site there is no evidence of extensive soil displacement associated with salvage activities. Windthrow and animal burrowing over the past several centuries have combined to perturb the shallow deposit to an unknown extent.

5. Density of Cultural Materials

An average density of 46 items/cubic meter was calculated for the 3.75 cubic meters of excavated cultural deposit. Using this figure, the site might be expected to yield between 23,000 and 32,000 cultural items if completely excavated. The ratio of tools to debitage is approximately 1 to 21.

6. Range of Cultural Materials

No faunal or floral remains were recovered. All cultural material recovered consisted of lithic debitage and flaked stone tools.

FUNCTION AND CHRONOLOGY

The paucity of tools in the assemblage and their generalized nature (excepting the single projectile point recovered) does not facilitate the drawing of inferences concerning site function. Over 95% of the assemblage is debitage and the ratio of tools to debitage is 1 to 21. Both facts are indicative of the manufacture or maintenance of a flaked stone tool kit as one task carried out at the Vacuum site. Decortation flakes are very uncommon and the overall flake size of both CCS and obsidian debitage is small indicating that primary reduction was not an important function nor were large preforms employed in the manufacture of finished tools. Bifacial thinning flakes constitute approximately 9% of the debitage. The general picture that emerges is one of a site where limited manufacturing and/or maintenance tasks were performed involving both uniface and bifacially flaked stone tools. In other words, this is another enigmatic, low density lithic scatter in an upland setting.

The single projectile point recovered is a narrow-necked variety assignable to the Late Archaic period of the upper Willamette Valley.

SITE POTENTIAL AND SIGNIFICANCE

The cultural deposit at the Vacuum site does not appear to have been extensively disturbed by timber salvage activities conducted in the past; however, animal burrowing coupled with windthrow have succeeded in perturbing the thin cultural deposit to the extent that it is unlikely that intact cultural features will be discovered. Unfortunately, this degree of integrity loss appears to be the norm for "valley margin" and other low elevation upland sites on the periphery of the upper Willamette Valley within the Eugene BLM District. Sub-surface testing has been conducted at ten prehistoric sites on BLM-administered land in the Eugene District. No tested site has exhibited cultural deposits extending to depths greater than 35 centimeters below the surface and the average depth of deposit is closer to 10 or 15 centimeters below the surface. In all cases evidence for extensive burrowing activity was recorded.

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If the Vacuum site is typical of other upland sites in the district in so far as depth of deposit and extent of krotovination are concerned it is well below average when comparing the number of cultural items recovered per unit of cultural deposit excavated. The average of 46 items per cubic meter recorded for the Vacuum site is less than half the typical average documented for the seven other extensively tested sites.

There are three known additional sites in the Camp Creek drainage with Late Archaic components (35LA288, 35LA583 and 35LA874). Portions of 35LA288 and 35LA874 have never been logged, while 35LA583 has been logged but doe not appear to have been severely impacted by the action. Recent test excavations conducted at 35LA874 indicate that the deposit contains a larger number of lithic cultural artifacts per volume of excavated deposit than does the Vacuum site.

It is my professional opinion that the Vacuum site deposit lacks both integrity and sufficient concentration of artifactual material to expect that additional excavation would yield significant new information. I do not consider this site eligible for listing on the National Register of Historic Places. Further, it is my opinion that, in view of the already compromised integrity of the cultural deposit, the proposed timber harvest would not appreciably alter the character of the deposit nor affect the quantity or quality of information contained within the deposit.

REFERENCES CITED

Beckham, Stephen Dow

1976 Indian distribution in Oregon. In Atlas of Oregon, edited by William G. Loy, pp. 6-7. University of Oregon Books, Eugene, Oregon.

Beckham, Stephen Dow, Rick Minor and Kathryn Anne Toepel.

1981 Prehistory and history of BLM lands in west-central Oregon: a cultural resource overview. University of Oregon Anthropological Papers 25.

Folansbee, Julia A.

1975 Archaeological remains at the Beebe site (35LA216) in the southwestern Willamette Valley foothills. In Archaeological studies in the Willamette Valley, Oregon, edited by C. Melvin Aikens. University of Oregon Anthropological Papers 8: 403-424.

Franklin, Jerry F. and C. T. Dyrness

1973 Natural vegetation of Oregon and Washington. U.S.D.A. Forest Service General Technical Report PNW-8.

Minor, Rick and Kathryne Anne Toepel

1980 A preliminary report on the Halverson site (35LA261): a seasonal campsite in the Upper Willamette Valley, Oregon. Paper presented at the 33rd annual Northwest Anthropological Conference.

Minor, Rick, Paul Baxter, Stephen Dow Beckham and Kathryn Anne Toepel

1987 Cultural resource overview of the Willamette National Forest: a 10-year update. Report to the Willamette National Forest, Heritage Research Associates Report 60. Heritage Research Associates, Eugene, Oregon.

Sanford, Patricia R.

1975 The Lynch site (35LIN36). In Archaeological studies in the Willamette Valley, Oregon, edited by C. Melvin Aikens. University of Oregon Anthropological Papers 8: 227-271.

Southard, Michael D.

1987 An archaeological evaluation of the Mill King site (35LA805), Lane County, Oregon. Report on file with the Bureau of Land Management, Eugene District.

1989 An archaeological evaluation of the Crack Shot site (35LA848), Lane County, Oregon. Report on file with the Bureau of Land Management, Eugene District.

Toepel, Kathryn Anne

1985 The Flanagan site: 6,000 years of occupation In the upper Willamette Valley, Oregon. Unpublished PhD Dissertation, Department of Anthropology, University of Oregon.

Toepel, Kathryn Anne and Stephen Dow Beckham

1981 Ethnographic overview. In Prehistory and history of BLM lands in west-central Oregon: a cultural resource overview, by Stephen Dow Beckham, Rick Minor and Kathryn Anne Toepel, University of Oregon Anthropological Papers 25: 41-115.

U.S. Department of Agriculture
1987 Soil survey of Lane County area, Oregon. U.S.D.A., Soil Conservation Survey.

U.S. Department of the Interior
1961 Geologic map of Oregon west of the 121st meridian. Miscellaneous Geological Investigations, Map 1-325. U.S.D.I., United States Geological Survey.

White, John R.
1975a A proposed typology of Willamette Valley sites. In Archaeological studies in the Willamette Valley, Oregon, edited by C. Melvin Aikens. University of Oregon Anthropological Papers 8: 17-140.

1975b The Hurd site. In Archaeological studies in the Willamette Valley, Oregon, edited by C. Melvin Aikens. University of Oregon Anthropological Papers 8: 141-225.

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Archaeological Evaluation of the Shivigny East Site (35DO397): A Ridge Crest Hunting Camp in the Upper Umpqua Basin, Douglas County, Oregon

Brian L. O'Neill

Bureau of Land Management
Roseburg District

January, 1988

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ABSTRACT

This report presents the results of test excavations conducted at the Shivigny East Site (35DO397) by the Roseburg District Bureau of Land Management during September and October, 1987. The site is situated on a ridge crest at an elevation of 3280 feet above sea level in the upper Umpqua Basin, Douglas County, Oregon. A series of test pits and test probes was excavated adjacent to an abandoned caterpillar track. The intact cultural deposits were found to be extremely dense. The materials recovered suggest that this site was occupied from the latter part of the Middle Archaic into the Late Archaic period by small groups of hunters exploiting the upland resources during the summer months.

INTRODUCTION

The Shivigny East site (35DO397) is located in the NE¼SW¼, Section 25, T26S, R2W, Willamette Meridian, on land administered by the Bureau of Land Management. It was discovered in July 1987 as part of a pre-sale timber inventory (Barner 1987). Lithic debris and artifacts littered an abandoned caterpillar road adjacent to a previously harvested tract of land.

The site is situated on a ridge crest, known locally as Thunder Ridge, at an elevation of 3280 feet above sea level (Figure 8.1). The North Umpqua River lies approximately 1.5 miles to the north of the site. A small seep immediately north of the site held water during the months of September and October, at the end of a particularly dry summer.

Testing at the site included the excavation of five test pits and four test probes. The test pits held an extremely high density of cultural material consisting of waste flakes and formed tools. Cultural material was found in each of the test pits and test probes excavated along the ridge.

ENVIRONMENTAL BACKGROUND

The North and South Umpqua rivers have their origin in the Upper Umpqua Basin at approximately 6,000 feet. The Shivigny East site (35DO397) is located in the upper basin, which includes the mountainous regions upstream from the communities of Tiller and Idleyld.

This portion of the Upper Umpqua Basin lies within the Western Cascades physiographic province, characterized as containing generally rugged terrain. Tuffs, breccias, and agglomerates are abundant in the central portion of the province and "between the McKenzie and South Umpqua rivers, approximately three-fourths of the total area is made up of pyroclastic rocks" (Franklin and Dyrness 1973:24). Baldwin describes the region as composed of predominantly Eo-Oligocene flows and tuffs which are, to the east, overlain by more recent Plio-Pleistocene flows and tuffs (1981:70).

The climate of the Umpqua Basin is characterized by mild, wet winters and hot, dry summers. Average tempertatures recorded at Roseburg are 40° F in January and 68° F in July, with extremes of minus 1° F in January and 106° F in July. Average annual precipitation, reflecting the orographic barriers of the Coast and Cascade ranges, varies from 40 to 60 inches and falls mainly as winter and spring rain. Snow is infrequent at lower elevations but accounts for much of the winter precipitation at higher elevations. Above the 1000 foot level several light snowfalls usually cover the ground. Snow will persist most of the winter months at elevations of 3,000 - 4,000 feet, and significant amounts of snow are received by the higher peaks in the vicinity of the site -- such as Thunder Mountain (Wert et al. 1977:25).

This portion of the Upper Umpqua Basin (i.e. the North Umpqua drainage) lies at the southern extent of the Tsuga heterophylla vegetation zone (Franklin and Dyrness 1973:45, 70-88). The vegetation in the vicinity of the site is consistent with the associations described for this zone and include Douglas fir, cedar, madrone,

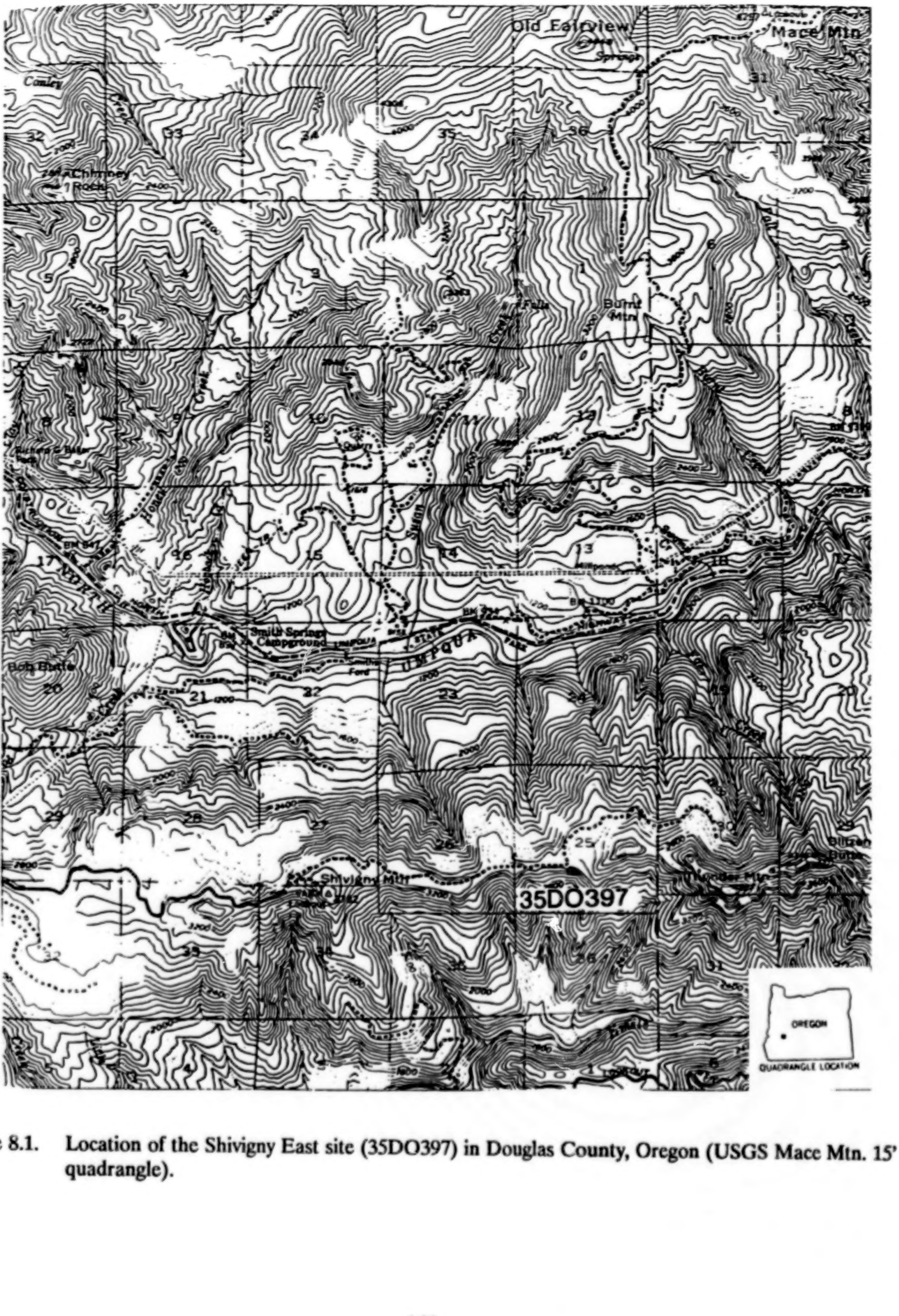

Figure 8.1. Location of the Shivigny East site (35DO397) in Douglas County, Oregon (USGS Mace Mtn. 15' quadrangle).

chinquapin, hemlock, rhododendron, ocean spray, vine maple, manzanita, salal, Oregon grape, thimbleberry, trailing blackberry, black cap, huckleberry, strawberry, Prince's pine, bear grass, vetch, and bracken fern.

Wildlife inhabiting the basin includes Roosevelt elk, black-tailed deer, black bear, river otter, beaver, marten, muskrat, raccoon, brush rabbit, and porcupine. Avian species within the region include California and mountain quail, blue and ruffed grouse, mourning dove, wood duck, common merganser, bald eagle, and pileated woodpecker (Lauman et al. 1972).

ARCHAEOLOGICAL AND ETHNOGRAPHIC BACKGROUND

The antiquity of human occupation in western Oregon is only suggested by the discovery of isolated fluted points. Dated elsewhere in North America to as old as 11,500 years ago and associated with big game hunters and extinct Rancholabrean megafauna, several of these distinctive artifacts have been found on the west side of the Cascades (Minor 1985). In the Umpqua Basin, along the North Umpqua River, two fluted points were found by a local collector (Hanes 1976; Minor 1985).

Radiocarbon dated sites in western Oregon, while not containing evidence of Paleoindian occupation, do help confirm the likelihood of materials of such antiquity. On the floodplain of the Long Tom River in the upper Willamette Valley a date of nearly 9,000 years ago was returned on charcoal from an amorphous hearth-like feature which was associated with lithic cultural material (Connolly 1987). In the Rogue River Basin to the south of the Umpqua Basin, excavations at the Marial Site have discovered an occupation dating to approximately 8,500 years ago (Schreindorfer 1985).

The oldest radiocarbon dated site in the Umpqua Basin (Figure 8.2) is the Middle Archaic component at the Narrows site, which is approximately eight miles northwest of the Shivigny East site. Located at the site of an aboriginal fishery, this component is dated to 6270 BP and contains choppers, a hammerstone, utilized flakes, an endscraper, and a biface fragment. The two projectile points recovered from this component include an asymmetrical broad-stemmed specimen and a convex-base foliate specimen. A second Middle Archaic component at the Narrows site, with a date of 5090 BP, includes a variety of chipped and ground stone tools. The majority of the classifiable projectile points recovered from this component are broad-stemmed specimens and include both corner- and side-notched varieties. Stone bowl mortar fragments and pestles indicate that the processing of vegetal foods occurred at the site during this period of occupation (O'Neill 1987b).

Other radiocarbon dated, Middle Archaic components have been discovered in the middle and upper Umpqua Basin. These include Times Square Rockshelter (Minor and Connolly 1987), South Umpqua Falls (Minor 1983), and the Reynolds site (Churchill 1986). The assemblages of these components typically contain broad-necked projectile points and lanceolate or foliate-shaped varieties.

Radiocarbon dated sites assignable to the Late Archaic period are also present in the middle and upper Umpqua Basin. These sites are South Umpqua Falls (Minor 1983), the Narrows site (O'Neill 1987b), Crispen Ranch (Baxter and Minor 1987), Martin Creek Site (O'Neill and Barner 1987), and Limpy Rock Shelter (Baxter 1987). Artifact assemblages from Late Archaic age components typically contain small side-notched points and narrow-necked points, which may be barbed or tanged. Bone tools and a baked clay figurine fragment have also been recovered. Two Late Archaic period burials have been excavated. Both were found to have been tightly flexed and placed in prepared basin-shaped pits (O'Neill 1987a; O'Neill 1987b). One of these burials was accompanied by a broken, spatulate-shaped ground slate club (O'Neill 1987a). The earliest date for Late Archaic period assemblages in the Umpqua Basin comes from the Crispen Ranch site (35DO36), with a date of 620 BP.

At the time of Euroamerican contact the Umpqua Basin was occupied by at least five aboriginal groups (Figure 8.3). One of these groups, the Athapascan Upper Umpqua, inhabited a large portion of the basin -- from Scottsburg to the Cascades (Honey and Hogg 1980:66-76; Beckham 1986:27-39) -- and presumably inhabited the

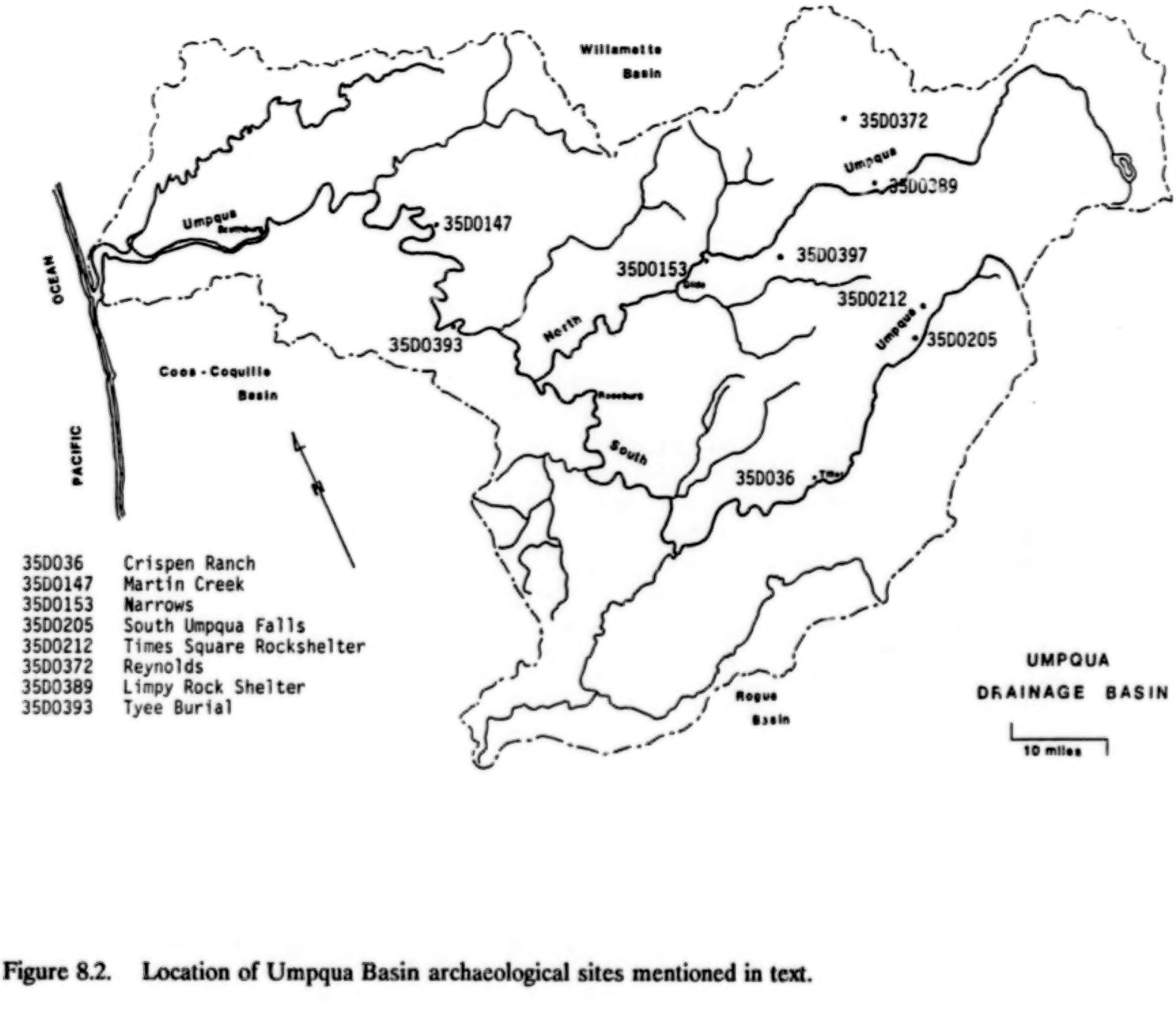

Figure 8.2. Location of Umpqua Basin archaeological sites mentioned in text.

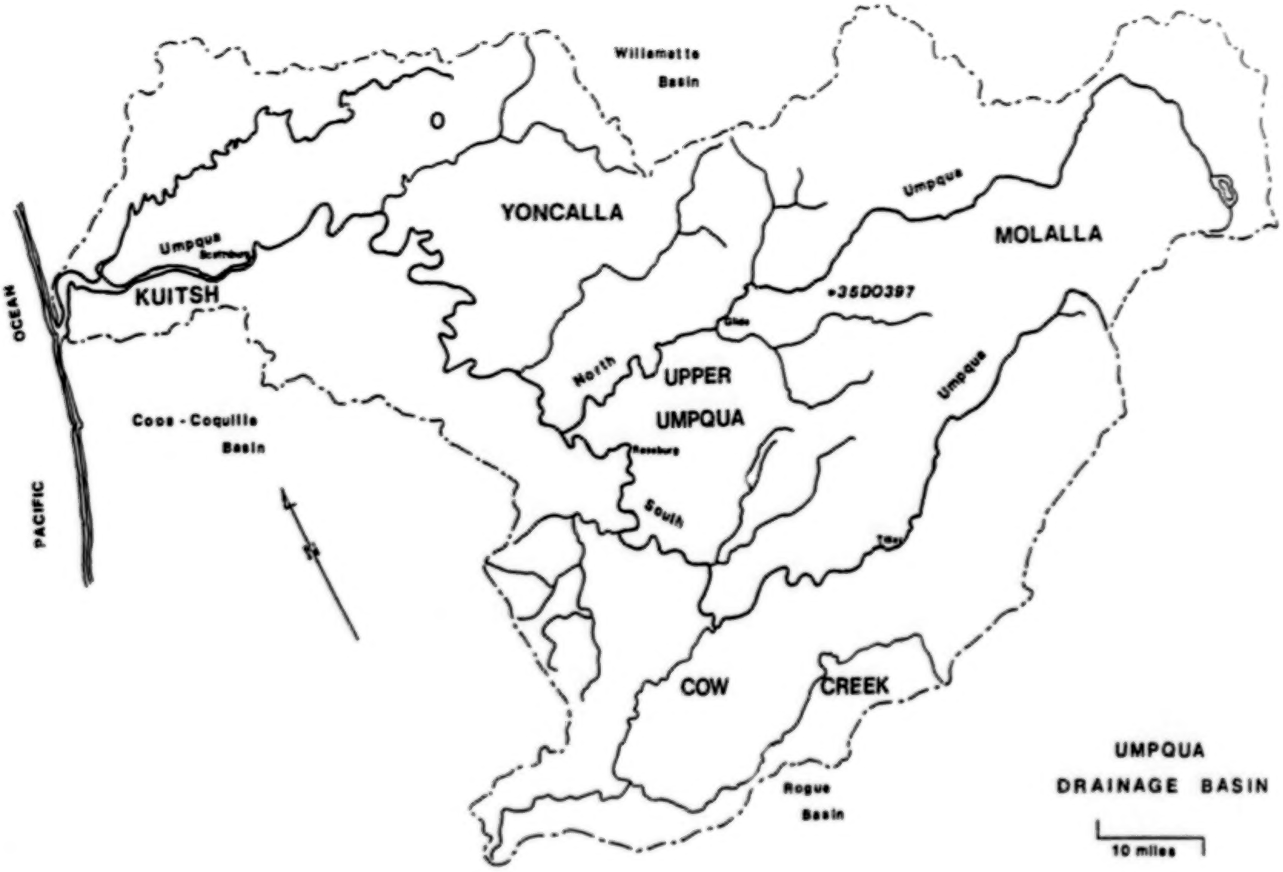

Figure 8.3. Distribution of Indian groups in the Umpqua Basin at the time of contact (after Beckham 1986).

region in the vicinity of the Shivigny East Site. The Upper Umpqua Indians shared a common language and culture with other Athapascan speakers occupying a crescent-shaped area which includes coastal drainages south to the Smith River region of northern California. Linguistic evidence suggests that Athapascan speakers migrated from their NaDene homeland in the western subarctic to the southwest Pacific Coast at approximately AD 900 (Hoijer 1956, 1960). While there were regional variations in dialect, there were only minor differences in subsistence pursuits, material culture, and ceremony among these Pacific Athapascan groups (Drucker 1937:285).

The Indians of southwestern Oregon and northwestern California lived in politically and economically autonomous villages comprised largely of patrilineally related kin. There was no formal political organization above the village level, although alliances between groups could be formed and strengthened by the purchase of brides from neighboring groups (Drucker 1937). Within these villages a "big man" helped direct affairs and settle disputes. His position was achieved through the strength of his personality as well as the possession of wealth and its strategic redistribution.

Complementary settlement-subsistence models have been proposed for the aboriginal inhabitants of the Umpqua Basin (cf. Hanes 1977:5-8; Simmons 1985:3.2-3.5). Both of these models are ecologically based and entail the seasonal movement of people which, depending upon assumptions dealing with the relative abundance of local resources, may have been substantial or not.

According to Simmons, winter villages were located adjacent to the river and its principal tributaries, and were occupied during the winter months. With the coming of spring, temporary camps were established from which camas, berries, and game might be procured. From July through September, small upland camps were occupied. During these summer and early fall months, a wide variety of resources were available including camas, tarweed seed, sugar pine nuts, acorns, berries, insects, water fowl, and large and small game. According to this model, temporary fishing camps were occupied during October and November. In December the Indians retreated to their winter village, where collected foods had been stored (Simmons 1985:3.2-3.5).

Hanes notes that winter villages are located in the valley lowlands in regions where the distribution of major resources co-occur during the fall months. These major resources include acorns, camas, and fish. The latter two resources also occur in the spring. According to this model, the winter villages are probably not abandoned, but continue to be occupied by some portion of the patrilineal band during the entire year. Small groups exploited the resources of the mountainous upland regions of the basin during the summer. These resources would have included berries and terrestrial game (Hanes 1977:5-8).

Early accounts suggest that big game animals such as deer, elk and bear were plentiful in the basin (Douglas 1959). Of these, deer seemed to have been an important and fairly reliable source of food and clothing. It has been suggested that one of the reasons for the annual burning of grasslands by the Indians was to encourage deer to utilize convenient hunting spots. Deer were hunted in a variety of ways. A deer-head camouflage might be used to stalk a deer which would then be dispatched using a bow and arrow. Salt licks and springs were favorite spots from which to hunt deer. Communal drives might also be organized. These would entail the construction of long brush fences, or barriers, across the head of a canyon. Openings would be left in these fences and fiber rope snares placed in them (Riddle 1968).

While southwest Oregon and the Umpqua Basin still remain an "archaeological frontier" (Aikens 1984:122) wherein much basic research still needs to be conducted, the recent spate of investigation in the basin is helping to ameliorate the situation. Because the ethnographic record of the native inhabitants of the Umpqua Basin is extremely limited, archaeological investigation in the region assumes added importance as a method of reconstructing the lifeways of the basin's original occupants.

PROCEDURE AND RESULTS

Lithic debris and formed tools were discovered during an inventory of the area in July 1987. This material -- 84 CCS flakes, 16 obsidian flakes, one basalt flake, one basalt core, one obsidian uniface, and one edge battered cobble -- was found strewn along a 120 meter stretch of abandoned caterpillar track that followed the ridge crest. Visibility within this narrow track was moderate. To the north and south of this track vegetation obscures the ground and no cultural debris was noticed.

Subsurface evaluation of site 35DO397 was conducted by the Roseburg District BLM between September 22 and October 20, 1987. Testing included the excavation of five 1x1 meter test pits (TP) and four 50x50 cm probes (P). Each of these was excavated in 10 cm levels and the fill was passed through 1/4 inch hardware cloth. Approximately 3.2 m^3 were excavated.

The test pits were excavated in order to assess the nature and integrity of the remaining subsurface cultural deposits. The probes, which were quickly abandoned upon discovering cultural material, were excavated in order to help determine the horizontal extent of the site.

Stratigraphy

The soils in the vicinity of the site have been identified as belonging to the Honeygrove/Shivigny Association. Soils of these series are Typic Haplohumults. They are found on old stable land surfaces, particularly over volcanic rocks of the Little Butte Formation -- which includes tuff, breccia and some andesite bedrock. They are well-drained soils and occur on slopes of 10 to 35 percent. Depth to bedrock for Shivigny series soils may be as great as five feet (Wert et al. 1977:46, 381-2, 397-400).

Test excavations at the Shivigny East Site revealed that the soils along the ridge crest vary in depth. In places, bedrock is exposed at the surface, particularly to the south of the abandoned track and above the steep bluffs. Bedrock was encountered approximately 30 cm below the surface in TP5. In TPs 1 through 4 bedrock was not encountered, though the excavation of these units continued to 60 to 80 cm below the surface.

The soil is generally a homogeneous reddish-to-grayish brown clayey silt, becoming more clayey with depth. Occasional cobble-sized pieces of colluvium were excavated and were found to be more frequent with depth. Duff covers the surface of the site to a depth of 5 to 10 cm and consists of leaves and fir needles. Tree roots were found throughout the excavation (Figure 8.4).

Excavation

The five test pits excavated at 35DO397 were placed within 32 meters of each other. TPs 1, 2 and 3 formed a north-south, 1x3 meter trench to the south of the caterpillar track. TP4 was placed 17 meters to the east of this trench and TP5 approximately 15 meters west of the trench (Figure 8.6). Lithic debris more densely littered the surface in this area than elsewhere along the track.

TP1 was excavated to a depth of 70 cm below the surface. To the north, TP2 was excavated to 60 cm and TP3, to the south of TP1, was excavated to 80 cm below the surface. The cultural material recovered from these test pits, summarized in Table 8.1, was found to be remarkably dense. Though charcoal flecking was observed at a depth of approximately 60 cm below the surface, no cultural features were noted during the excavation of these test pits and there was no indication of subsurface disturbance to the cultural deposits.

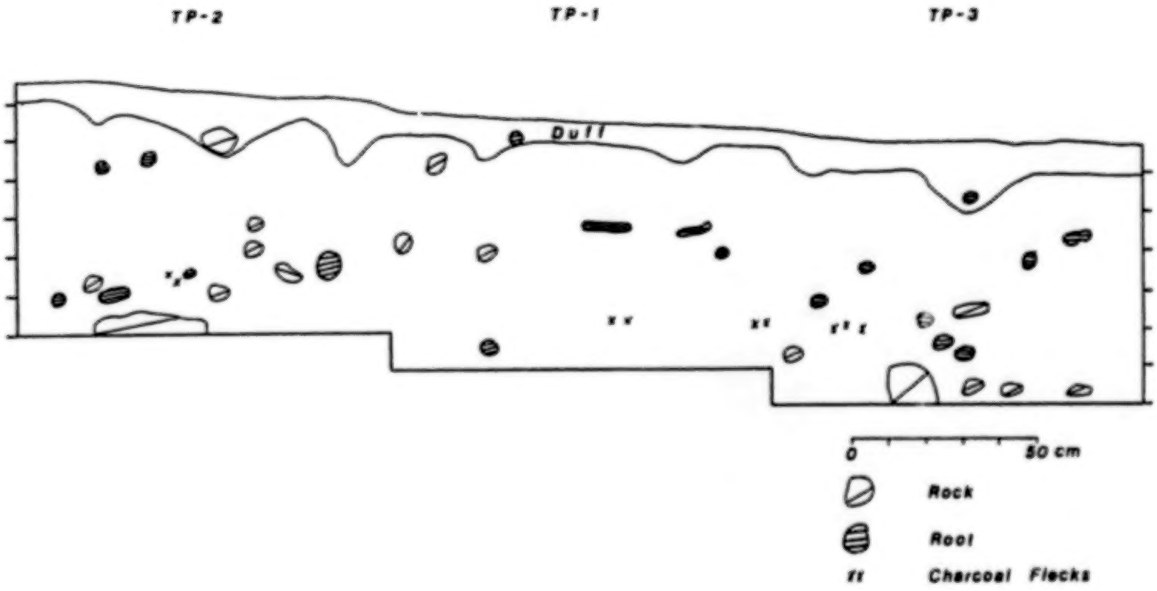

Figure 8.4 East profile of TPs 1-3, 35DO397.

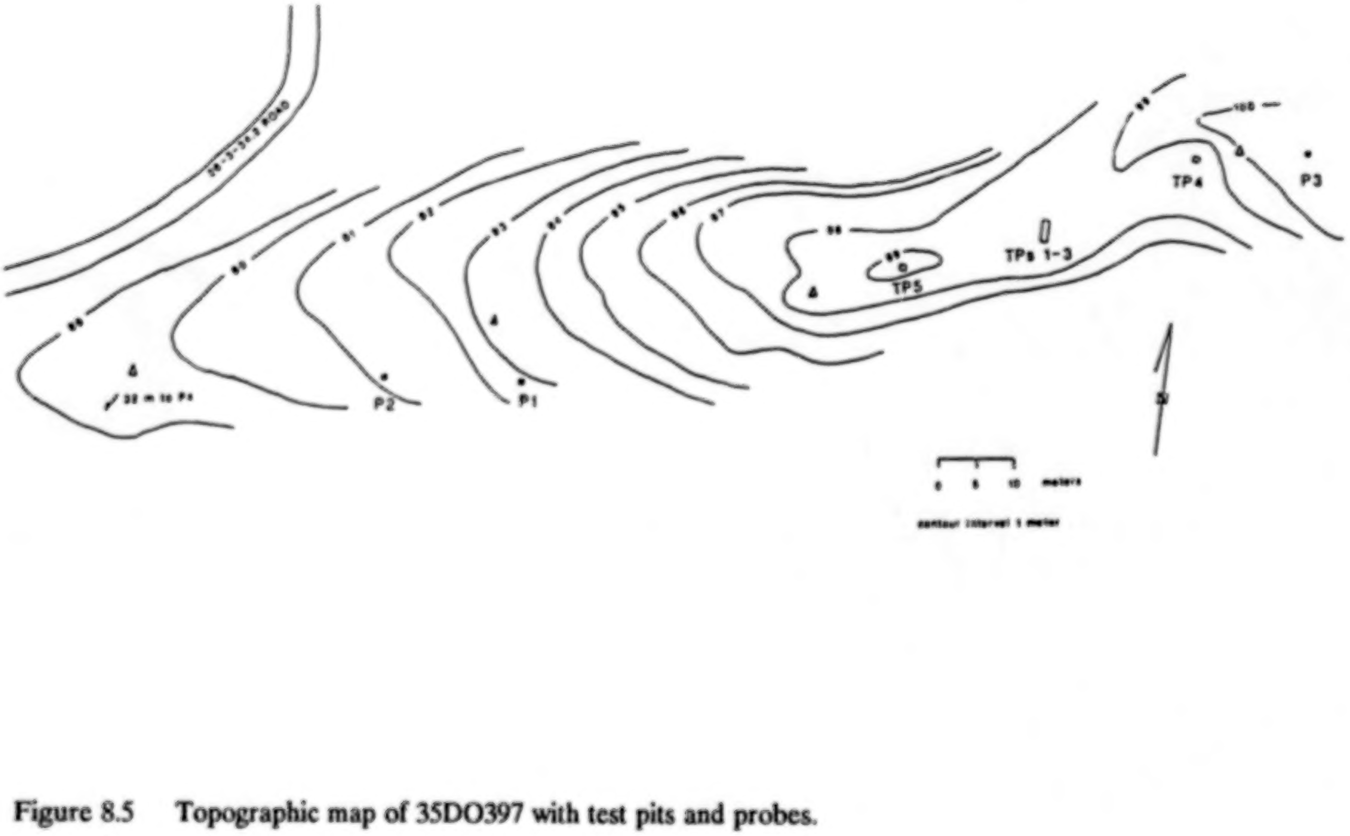

Figure 8.5 Topographic map of 35DO397 with test pits and probes.

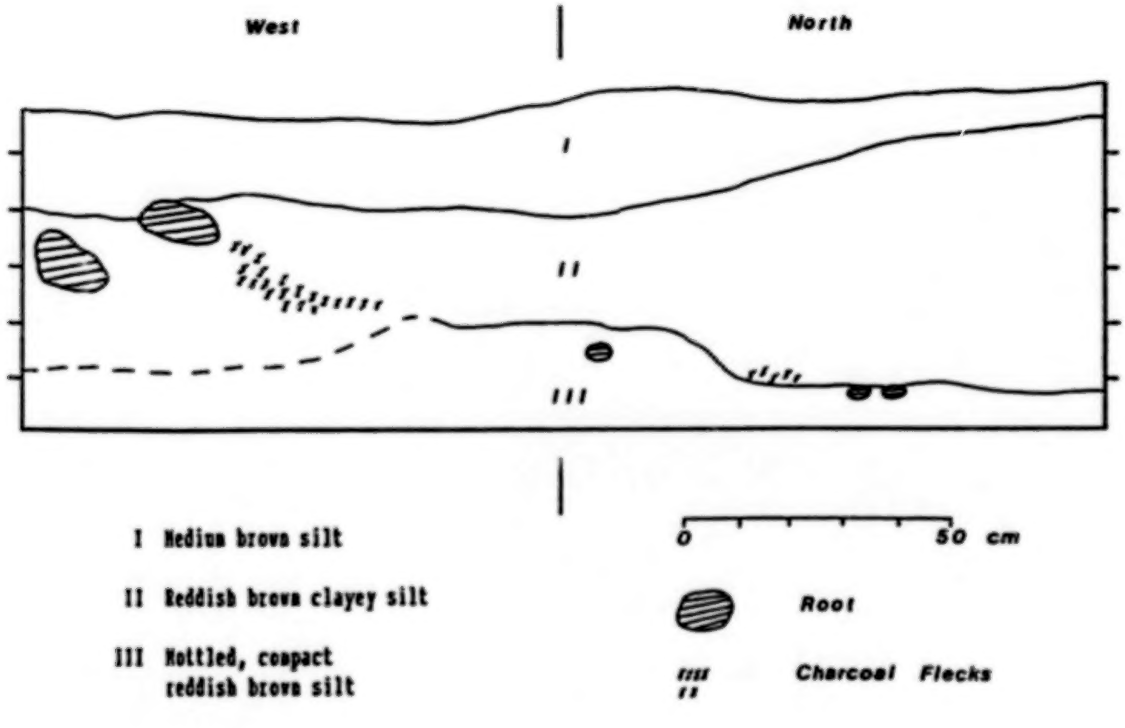
West
North
I
II
III
I Medium brown silt
II Reddish brown clayey silt
III Mottled, compact reddish brown silt
0
50 cm
Root
Charcoal Flecks

Figure 8.6 West and north profiles of TP4, 35DO397.

		Debitage			Tools					
Unit	Level	OBS	CCS	BAS	PTW	OBS	CCS	BAS	TOTAL	(item/m^3)
TP1	1	19	112	2	1	1	2		137	1370
	2	26	142	4		2	1		175	1750
	3	14	51	1		3	3		72	720
	4	10	53				1		64	640
	5	4	8						12	120
	6	7	6				1		14	140
	7	4	5						9	90
		84	377	7	1	6	8	0	483	
TP2	1	39	181	1			3		224	2240
	2	23	54	2		2	3		84	840
	3	20	63	7	1				91	910
	4	6	24				2		32	320
	5	5	15			1			21	210
	6	1	1						2	20
		94	338	10	1	2	9	0	454	
TP3	1	4	45		1				50	500
	2	24	202				2	1	229	2290
	3	18	109				6		133	1330
	4	21	122		1		1	1	146	1460
	5	10	42		1	4	1		58	580
	6	16	50		1	2	3		72	720
	7	4	26			1			31	310
	8	1	13			2			16	160
		98	609	0	4	9	13	2	735	
TP4	1	7	41		2		1		51	510
	2	11	82			1			94	940
	3	9	33				1		43	430
	4	8	17			1			26	260
	5	3	18				1		22	220
	6	2	2						4	40
		40	193	0	2	2	3	0	240	
TP5	1	42	143		1		4		190	1900
	2	34	153				3		190	1900
	3	28	78				3	1	110	1100
		104	374	0	1	0	10	1	489	
P1	1		5						5	200
	2	1	10				1		12	480
P2	1	1	1						2	80
	2	1	1						2	80
	3								0	0
P3	1	3	3						6	240
	2	1	4						5	200
P4	1		1						1	40
	7	25	0	0	0	0	1	0	33	

TP = Test Pit; P = Probe

Table 8.1. Summary of cultural material recovered from test pits and probes at site 35DO397.

TP4, placed on the north side of the track, was excavated to a depth of 60 cm below the surface. A different soil regime was noted during the excavation of this test pit (Figure 8.6). Charcoal flecking and recently burned roots were observed in the southwest quadrant of the test pit. The cultural material recovered from TP4, summarized in Table 8.1, was found to be less dense than that of TPs 1 through 3.

TP5, excavated to 30 cm below the surface where it was terminated upon reaching bedrock, was placed on the south side of the caterpillar track. A section of limb was found buried in the fill of TP5 at a depth of 20 to 30 cm below the surface, indicating that this area had suffered disturbance and that the test pit may have been within the limits of the abandoned roadway. A summary of the cultural material recovered from this test pit is presented in Table 8.1.

Probes 1, 2, and 4 were placed to the west of TP5 and to the south of the roadway. Probes 1 and 2 were within dense rhododendron thickets, P4 was placed on a flat area above the bluffs and was in an open stand of mature Douglas fir. P3 was placed to the east of TP4 (Figure 8.5). As may be seen in Table 8.1, which summarizes the cultural material from these probes, lithic debris was discovered in each of the probes.

ARTIFACT ANALYSIS

Recovered during the evaluation of the Shivigny East Site were 66 tools and 2369 pieces of lithic debitage. The artifact assemblage is limited in variety and consists of projectile points, bifaces, unifaces, cores and hammerstones (Table 2). Most of the projectile points and all of the other formed bifaces were broken. No ground stone tools were collected. CCS dominates the tool and debitage categories, with obsidian contributing a minor, but significant, proportion.

		Material		
	OBS	CCS	BAS	TOTAL
Projectile Points	8	8	-	16
Bifaces	6	9	-	15
Unifaces	5	15	1	21
Cores	-	12	-	12
Hammerstones	-	-	2	2
	19	44	3	66

Table 8.2. Summary of artifacts recovered from the Shivigny East Site.

The artifacts have been labled according to their provience; TP (test pit) or P (probe), followed by the number of the unit and the 10 cm level from which the artifact was collected. The last number distinguishes one artifact from another in the same level of the same unit. For example, TP4 3-2 would designate the second artifact described from Level 3 of Test Pit 4.

Projectile Points

Sixteen whole and fragmentary projectile points were recovered (Table 8.3). These specimens are generally well-formed, finely worked bifaces that could have been hafted to wooden shafts to be used with bows or atlatls. Nine specimens are sufficiently complete to allow them to be assigned to morphological types (Figure 7).

Type 1: Broad-shouldered foliate with contracting stem. One CCS specimen (TP1 2-1).

Type 2: Serated foliate on relatively broad flake with straight base and convex blades. One obsidian specimen (TP1 3-1) and one CCS specimen

Type 3: Lanceolate-shaped point with contracting stem and rounded base. One obsidian specimen (TP2 2-1) and one CCS specimen (TP1 1-1).

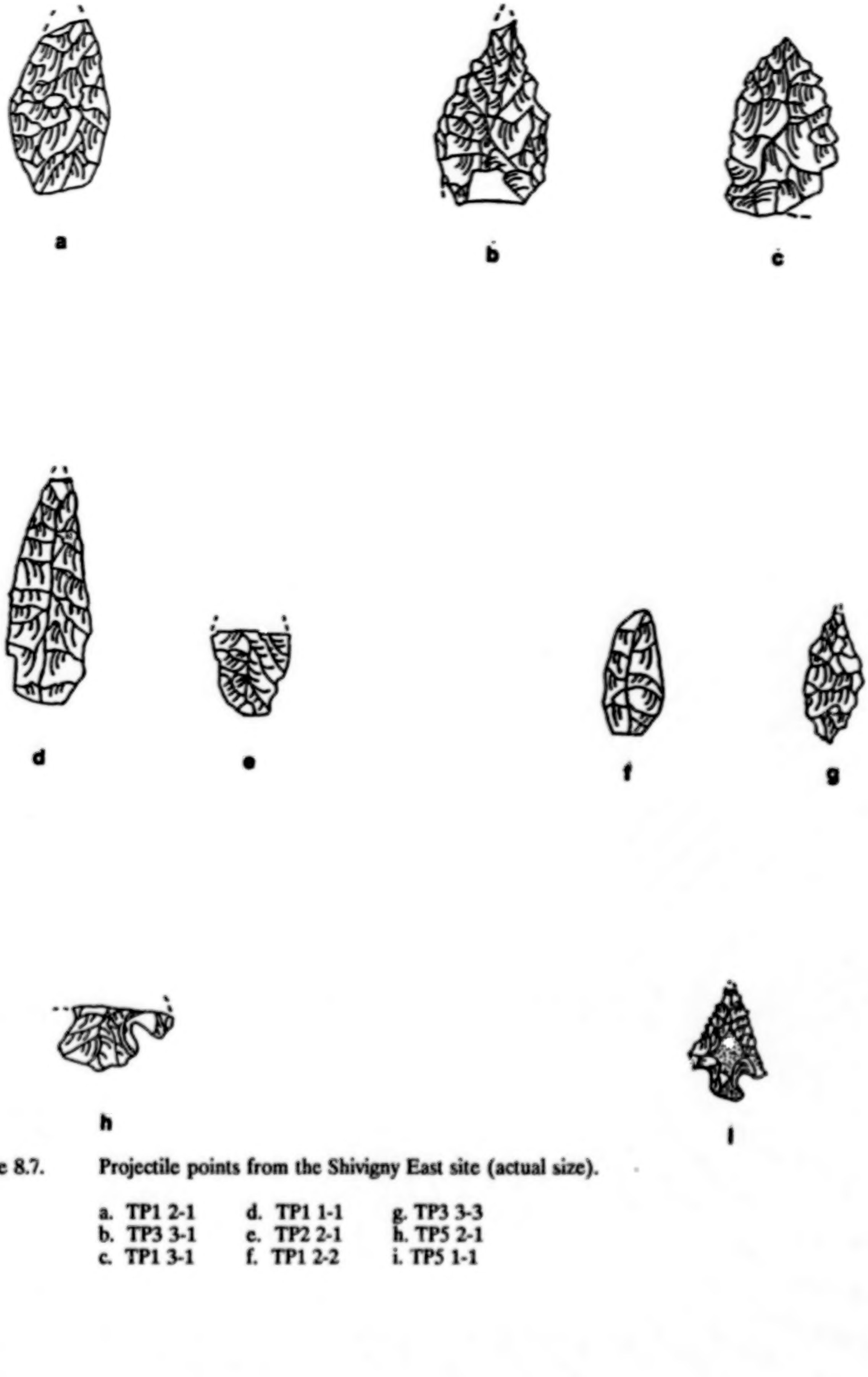

Figure 8.7. Projectile points from the Shivigny East site (actual size).

a. TP1 2-1
b. TP3 3-1
c. TP1 3-1
d. TP1 1-1
e. TP2 2-1
f. TP1 2-2
g. TP3 3-3
h. TP5 2-1
i. TP5 1-1

Type 4: Bipointed, relatively thick point with convex blades. One obsidian specimen (TP1 2-2) and one CCS specimen (TP3 3-3).

Type 5: Broad-necked, corner-notched point with a convex base. One CCS basal fragment (TP5 2-1).

Type 6: Small, narrow-necked tanged point. One CCS specimen (TP5 1-1).

Seven specimens too fragmentary to classify were also recovered. Two of these were missing the proximal or hafting element (TP3 3-2 and TP4 2-1) and two were distal or tip fragments (TP1 3-2 and TP3 5-2). One obsidian specimen (TP3 5-3) is a rounded proximal fragment.

It should be noted that both of the corner-notched projectile points were recovered from TP5 and no notched projectile points or fragments that may be interpreted as belonging to notched specimens came from the 1x3 meter trench formed by TPs 1 through 3.

Specimen Number	Raw Material	Type	measurements in mm			Thkn's	Length	Wt
			W_m	W_n	W_b			
TP1 1-1	CCS	3	12.7	–	9.0	4.8	36.1	2.3
TP1 1-2	CCS	frag	17.0	–	–	4.4	15.9*	1.2
TP1 2-1	CCS	1	17.0	–	9.0	4.9	29.3	2.9
TP1 2-2	OBS	4	10.0	–	4.6	6.7	19.8	1.4
TP1 3-1	OBS	2	18.2	–	15.3*	5.7	29.0*	2.8
TP1 3-2	OBS	frag	10.0*	–	–	2.6	24.2*	0.6
TP2 2-1	OBS	3	12.9	–	7.2	4.5	15.4*	0.9
TP3 3-1	CCS	2	18.4	–	11.8	9.0	29.7	4.1
TP3 3-2	CCS	frag	19.0	–	–	6.0	26.5*	2.3
TP3 3-3	CCS	4	9.5	–	2.7	5.1	20.9	1.1
TP3 5-1	OBS	frag	14.9*	–	–	4.4	16.6*	1.2
TP3 5-2	OBS	frag	10.2*	–	–	3.1	14.3*	0.3
TP3 5-3	OBS	frag	13.2*	–	11.0	3.9	7.4*	0.4
TP4 2-1	OBS	frag	20.2	–	–	3.8	24.1*	2.1
TP5 1-1	CCS	6	13.0	4.8	5.0	2.7	18.2	0.5
TP5 2-1	CCS	5	15.9*	9.5	12.9	3.7	9.9*	0.6

Key: W_m = maximum width; W_n = neck width; W_b = base width;
* indicates incomplete or broken specimen

Table 8.3. Metric data for Shivigny East Site projectile points.

Bifaces

Fifteen biface fragments were collected during the test excavation at 35DO397 (Table 8.4). Of these 40% (6) are obsidian and 60% (9) are CCS. No morphological types were able to be distinguished from the fragments.

Unifaces

Twenty-one unifacially flaked specimens were collected (Table 8.5). Of these, 24% (5) are obsidian flakes, 71% (15) are CCS, and 5% (1) basalt. The modified edges have been classified according to a scheme developed by Pettigrew (cf. 1980:7-8; 1982:75-84, 160). For the present analysis only four of the edge types need defining.

Type 1: Concave edge

Type 2: Straight edge

Type 3: Convex edge

Type 5: Commonly referred to as "endscrapers," the edge is convex at the end of a flake and is polished or crushed from use.

Specimen	Raw	measurements in mm			
Number	Material	Length	Width	Thkn's	Weight
TP1 1-2	CCS	15.4•	16.7	3.7	1.2
TP2 1-1	CCS	23.0•	30.7	11.2	7.5
TP2 2-2	CCS	17.8•	7.0•	6.2	0.6
TP2 4-1	CCS	15.6•	13.1	2.0	0.6
TP3 2-1	CCS	12.1•	13.9•	4.6	0.6
TP3 3-5	CCS	19.5•	12.4•	8.0	2.2
TP3 5-4	OBS	6.2•	11.8•	5.8	0.4
TP3 5-5	CCS	19.0•	37.8•	8.3	7.2
TP3 6-1	CCS	13.7•	12.4•	6.4	0.8
TP3 6-2	OBS	14.0•	14.3•	3.6	0.8
TP3 7-1	OBS	21.6•	17.3•	2.4	0.9
TP3 8-1	OBS	25.0•	12.0•	3.0•	0.6
TP3 8-2	OBS	22.0•	14.0•	5.3	1.5
TP4 4-1	OBS	13.3•	17.6•	4.2	1.2
TP4 5-1	CCS	12.8•	18.1	7.0	1.6

• indicates incomplete or broken specimen

Table 8.4. Metric data for Shivigny East Site bifaces.

The convex Type 3 edges are most common in this assemblage, followed by types 5, 2, and 1 (Table 8.6). Flake sizes of 2 cm or greater were selected for use as expedient tools.

Specimen Number	Raw Material	Edge Type	Flake Size
TP1 1-3	OBS	2	2
TP1 2-3	OBS	1	3
TP1 3-3	OBS	2	2
TP1 3-4	CCS	3	4
TP1 3-5	CCS	3	2
TP1 3-6	CCS	3	3
TP1 4-1	CCS	1	1
TP2 2-3	OBS	5	2
TP2 2-5	CCS	3	2
TP2 4-2	CCS	3	2
TP3 2-2	CCS	5	3
TP3 2-3	BAS	2	5
TP3 3-4	CCS	3	2
TP3 4-1	CCS	5	2
TP3 6-3	OBS	3,3	2
TP3 6-4	CCS	2	2
TP4 3-1	CCS	5	3
TP5 1-2	CCS	5	4
TP5 3-1	CCS	3	5
TP5 3-2	CCS	3	2
P1 2-1	CCS	3	3

Table 8.5. Shivigny East site uniface data.

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Edge Type	Flake Size					Total	
	1	2	3	4	5	n	%
1	1	-	-	-	-	2	10
2	-	3	-	-	1	4	19
3	-	6	2	1	1	10	48
5	-	2	2	1	-	5	24
	1	11	5	2	2	21	
	(5%)	(52%)	(24%)	(10%)	10%)		

Table 8.6. Summary of Shivigny East site unifaces by edge type and size.

Cores

Twelve CCS cores were collected (Table 8.7). Each of these specimens shows signs of multiple flake scars. No bipolar cores were noted. Also collected was one large, unmodified piece of CCs (TP5 3-4). Measuring 71 x 52 x 41 mm and weighing over 110 gm, this chunk of CCS was inconsistant with the other naturally occurring stones and is considered to be a piece of raw material brought to the site by the aboriginal occupants.

Specimen Number	Raw Material	Measurement in mm Length	Width	Thkn's	Wt
TP1 6-1	CCS	33	26	22	17.0
TP2 1-2	CCS	70	46	30	105.1
TP2 1-3	CCS	38	33	26	27.8
TP2 2-4	CCS	49	29	28	38.0
TP2 5-1	CCS	29	24	18	8.4
TP3 3-6	CCS	34	44	32	51.4
TP3 6-5	CCS	34	30	15	18.8
TP4 1-1	CCS	57	60	27	63.3
TP5 1-3	CCS	62	47	31	63.8
TP5 1-4	CCS	31	14	11	6.3
TP5 2-2	CCS	48	46	38	81.7
TP5 2-3	CCS	62	38	22	41.0

Table 8.7. Metric data for Shivigny East site cores.

Hammerstones

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Two basalt hammerstones were collected. Specimen TP3 4-2 is an oval-shaped cobble measuring 101 x 77 x 67 mm. Specimen TP5 3-3 is a cobble fragment measuring 57* x 53* x 40 mm.

Lithic Debitage

Each of the 2369 pieces of debitage collected from the Shivigny East Site was categorized according to its a) material type, b) reduction stage, c) completeness, and d) size. This scheme is a modification of one proposed by Sullivan and Rozen (1985) and is currently being used by others conducting research in the Umpqua Basin (cf. Baxter 1987) and elsewhere in Oregon (cf. Oetting 1987).

	Stage				
	Primary	Secondary	Interior	Debris	Total
OBS	0	6	410	11	427
	(0)	(1.4)	(96.0)	(2.6)	
CCS	1	27	1268	620	1916
	(0.1)	(1.4)	(66.2)	(32.4)	
BAS	0	0	6	11	17
	(0)	(0)	(35.3)	(64.7)	
PTW	0	0	0	9	9
	(0)	(0)	(0)	(100)	
	1	33	1684	651	2369
	(0.04)	(1.4)	(71.0)	(27.4)	

Table 8.8. Summary of debitage by reduction stage and material.

Four types of raw material are represented in the lithic debitage at 35DO397. These include

	n	%
Obsidian	427	18.0
CCS	1916	80.9
Basalt	17	0.7
Petrified wood	9	0.4

Though CCS and basalt commonly occur in the region, a local obsidian source has yet to be discovered (cf. Skinner 1983). Recent obsidian sourcing of specimens collected from archaeological sites in the Upper Umpqua Basin have shown that distant sources were exploited. The two most common sources, as determined by X-ray flourescence of trace elements, were in the Newberry Crater region of the eastern Fort Rock Basin and the Silver Lake/Sycan Marsh region of south central Oregon (S. Berryman 1987; J. Berryman 1987).

The debitage was separated into four lithic reduction stage classifications. These include

a) primary flakes are those with cortex covering the entire dorsal surface;
b) secondary flakes contain cortex on a portion of the dorsal surface;
c) interior flakes are free of cortex;
d) debris, also referred to as "angular waste," does not share the morphological characteristics

of flakes -- i.e. striking flatform, bulb of percussion, etc.

Only a very small portion of the debitage assemblage consisted of primary and secondary flakes (Table 8). Of the two principal material types -- CCS and obsidian -- the interior flake class was the most common. The debris class shows the most variation with a sizeable proportion of CCS specimens (32%) falling within this category and only a minor proportion (3%) of obsidian being represented. CCS core reduction, resulting in the production of debris, may be inferred -- particularly in light of the number of cores recovered during testing.

Individual flakes were examined for the presence or absence of striking platform (Table 8.9). The greater proportion of obsidian flakes with platform present compared to CCS specimens suggests that these raw materials were treated differently. The remarkably different proportions observed in the debris category seem to confirm this.

Finally, the individual pieces of debitage were measured by placing each upon a grid comprised of a series of concentric circles, the diameters of which increased in 1 cm increments from 1 to 8 cm. Only three pieces of debitage were greater than 5 cm in diameter, the majority being 2 cm or smaller (Table 8.10). Obsidian debitage was generally smaller than either CCS or basalt, with CCS having the greatest variation. For purposes of intersite comparison it should be remembered that 1/4 inch mesh was employed in the field to recover cultural material.

In summary, it would appear that obsidian was a relatively scarce resource that was used conservatively. Smaller flakes, few pieces of debris, and a relatively high proportion of flakes with platforms indicate that tool manufacture and repair were undertaken, rather than core reduction.

CCS debitage, on the other hand, consists of sizeable proportions of debris, larger flakes, and greater proportions of flakes without platforms, indicating that core reduction of CCS raw material was undertaken. The presence of cores and a large unmodified piece of CCS bear this out. Tools were then manufactured from the flakes struck from these cores.

Faunal Remains

Four small pieces of calcined bone were recovered, none larger than 1.5 cm in length. Three of these were collected from TP3, one from TP5. No diagnostic features are contained on these small fragments.

DISCUSSION AND SUMMARY

The Shivigny East Site lies at an elevation of 3280 feet above sea level along a ridge crest overlooking the North Umpqua River in the Upper Umpqua Basin. Immediately north of the site is a small intermittent seep that was observed to hold water in September and October. To the south are steep bluffs. A mixed vegetation community covers the area, providing food resources for animals and man alike.

Test excavations at 35DO397 included the excavation of five test pits and four probes from which 66 tools and 2369 pieces of debitage were recovered. Sixteen whole and fragmentary projectile points were collected and dominate the formed tool category. Twenty-one unifacially modified flakes were collected, of which five are endscrapers. No ground stone tools were observed or collected. Cultural material was found to be extremely dense, with rates as high as 2290 items per cubic meter observed in a single 10 cm level.

The excavation of the test pits revealed that, within the limits of the roadway which follows the ridge crest, there has been extensive disturbance to cultural deposits. Beyond the abandoned roadway, particularly to the south and where a 1x3 meter trench was excavated, the site appears to remain undisturbed by previous logging activities.

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	Platform			
	Present	Absent	Debris	Total
OBS	252	164	11	427
	(59.0)	(38.4)	(2.6)	
CCS	389	907	620	1916
	(20.3)	(47.3)	(32.4)	
BAS	3	3	11	17
	(17.6)	(17.6)	(64.7)	
PTW	0	0	9	
	(0)	(0)	(100)	
	644	1074	651	2369
	(27.1)	(45.3)	(27.4)	

n / (%)

Table 8.9. Summary of debitage by presence or absence of platform.

				Flake Size			
	1	2	3	4	5	>5	Total
OBS	319	106	2				427
	(74.7)	(24.8)	(0.5)				
CCS	884	908	101	17	3	3	1916
	(46.1)	47.4)	(5.3)	(0.9)	(0.2)	(0.2)	
BAS	3	11	3				17
	(17.6)	(64.7)	(17.6)				
PTW		2	3	4			9
	(22.2)	(33.3)	(44.4)				
	1206	1027	109	21	3	3	2369
	(50.9)	(43.3)	(4.6)	(0.8)	(0.1)	(0.1)	

n / (%)

Table 8.10. Summary of debitage by size and material.

Stratigraphic profiles of the test excavations and a review of the vertical distribution of cultural material (Figure 8.9) do not suggest the presence of more than one cultural component. The majority of the cultural material was found from 0-30 cm below the surface, though in places it continues in decreasing density to 80 cm. No charcoal was collected and no cultural features were observed.

The projectile point assemblage from the Shivigny East Site is dominated by un-notched, foliate and lanceolate specimens. While some researchers in the Umpqua Basin have attributed time depths as great as 8000 years for sites from which foliate-shaped points have been collected (cf. Churchill 1986; Lyman 1985), Connolly and Baxter have recently cautioned against depending upon these morphological types to indicate great time depth (Connolly and Baxter 1986). Based upon a comparison of assemblages from Cascadia Cave and the Standley sites, as well as an examination of data from sites in southwest Oregon -- the Tlegetlinten and Marial sites, they argue that foliate points represent part of a technological tradition that persisted in places until quite late. Connolly, expanding on this theme in his presentation of a culture-historical scheme for southwest Oregon, suggests that they may be part of a cultural tradition he terms the "Glade Tradition" which may date to as recently as 300 years ago (Connolly 1986). Also included in the assemblage of diagnostic artifacts of this tradition are stone bowl mortars, hammer/anvil stones, edge faceted cobbles, fluted endscrapers, and large side-notched and stemmed projectile points with broad neck widths.

In the Umpqua Basin broad-necked points associated with foliate and lanceoloate projectile points have been found in radiocarbon dated deposits. These assemblages include those found at the Reynolds Site with a date of 2800 BP (Churchill 1986) and Rockshelter #2 at South Umpqua Falls with a date of 3190 BP (Minor 1983). A date of 2690 BP was found associated with broad-necked projectile points at Times Square Rockshelter (Minor and Connolly 1987). At the Narrow Site a date of 5090 BP was associated with an assemblage that included broad-necked points and stone bowl mortar fragments (O'Neill 1987b).

Assemblages that include narrow-necked points similar to the one found at the Shivigny East Site have also been radiocarbon dated in the Umpqua Basin. These include the Martin Creek Site with dates of approximately 400 BP (O'Neill and Barner 1987), Component I at the Narrows Site with dates to approximately 330 BP (O'Neill 1987b), and Limpy Rock Shelter with a date of 430 BP (Baxter 1987). In the South Umpqua drainage the dates for these projectile points have been slightly older, on the order of approximately 600 BP (cf. Minor 1983; Baxter and Minor 1987).

Given its predominantly chipped stone artifact assemblage and density of cultural material, the Shivigny East Site is interpreted as a temporary camp periodically occupied over a long period of time by small groups of hunters during the summer months. Tools of locally occurring CCS were manufactured and repaired. These same kinds of tools were also manufactured of obsidian which does not occur locally and which would have been secured through either trade or by travel to the source. There is no evidence -- such as pestles, stone bowl, hopper, or bedrock mortars -- to suggest that vegetal resources were processed at the site. This is not to say, however, that berries and nuts were not collected for immediate consumption or for transfer and storage at the winter village base camp located in the valley lowlands. Based upon projectile point types, the occupation of the Shivigny East Site may be assignable to the latter portion of the Middle Archaic period and the Late Archaic period.

The Shivigny East Site (35DO397) appears to meet the criteria for significance listed at 36 CFR 60.4d as well as the Oregon SHPO's criteria for significance. The dense, intact cultural deposits found at this site are likely to yield information important to a variety of questions regarding the prehistory of the Umpqua Basin and southwest Oregon. While the site does not appear to contain charcoal suitable for dating, it does contain a sufficient number of projectile points that could be used for seriation with other sites and assemblages of known age. Projectile points are common at this site and it is estimated that over one thousand might be collected if the site was excavated. This number is many more than is required for seriation but is indicative of the potential of the site. The large amount of debitage found at this site would provide data suitable for lithic studies (cf. Flenniken 1987). Finally, as a ridge crest hunting camp, the Shivigny East Site is part of a settlement/subsistence pattern the whole of which is only slowly becoming understood in the Umpqua Basin.

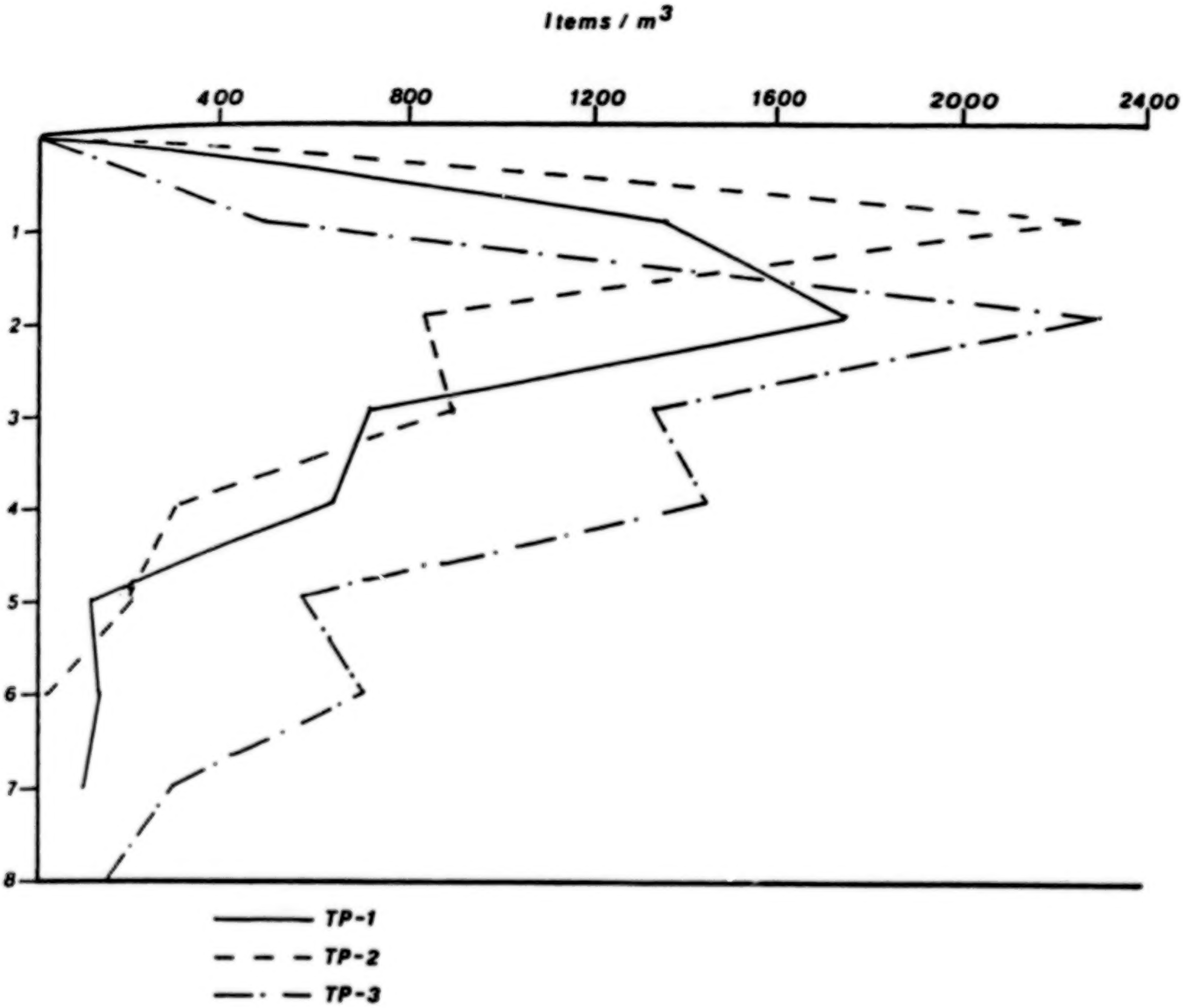

Figure 8.8. Vertical distribution of cultural materials in TPs 1 - 3.

REFERENCES CITED

Aikens, C. Melvin
1984 Archaeology of Oregon. U.S. Department of Interior, Bureau of Land Management, Oregon State Office.

Baldwin, Ewart M.
1981 Geology of Oregon, 3rd ed. Kendall/Hunt Publishing Company, Dubuque, Iowa.

Barner, Isaac N.
1987 Cultural Resource Inventory Record for Shivigny East, Site 35DO397. On file at the Roseburg District BLM, Roseburg, Oregon.

Baxter, Paul W.
1987 Archaeological Testing at Limpy Rock Shelter: An Upland Hunting Camp in the North Umpqua Valley. Report to the Umpqua National Forest by Heritage Research Associates, Eugene, Oregon. HRA Report No. 65.

Baxter, Paul W. and Rick Minor
1987 US Sprint Fiber Optic Cable Project Oroville, California to Eugene, Oregon. Archaeological Testing of Seven Sites in Oregon; Addendum #3 to the Technical Report. Report to US Sprint by Heritage Research Associates, Eugene. HRA Report No. 63.

Beckham, Stephen Dow
1986 Land of the Umpqua: A History of Douglas County, Oregon. Douglas County Commissioners, Roseburg, Oregon.

Berryman, Judy A.
1987 Archaeological Site Evaluation of the Little Oak Flat Site, Umpqua National Forest, Roseburg, Oregon. Report to the Umpqua National Forest by TMI Environmental Services, San Diego, California.

Berryman, Stanley R.
1987 Archaeological Site Evaluation of 35DO265, the Apple Creek Site, Umpqua National Forest, Roseburg, Oregon. Report to the Umpqua National Forest by TMI Environmental Services, San Diego, California.

Churchill, Thomas E.
1986 Archaeological Investigations of the Reynolds Site (35-DO-372). Report to the Umpqua National Forest by Coastal Magnetic Search & Survey, Salem, Oregon.

Connolly, Thomas J.
1986 Cultural Stability and Change in the Prehistory of Southwest Oregon and Northern California. Unpublished PhD dissertation on file with the Department of Anthropology, University of Oregon, Eugene.

1987 Recent Highway Archaeology Work in Oregon. Paper Presented at the Association of Oregon Archaeologists 3rd Annual Conference, Ashland, Oregon. November 6-7, 1987.

Connolly, Thomas J. and Paul W. Baxter
1986 New Evidence on a "Traditional" Topic in Pacific Northwest Prehistory. In Contributions to the Archaeology of Oregon 1983-1986, K.M. Ames (ed), pp. 129-146. Occasional Papers No. 3, Association of Oregon Archaeologists.

Douglas, David

1959 Journal Kept by David Douglas During His Travels in North America 1823-1827. Antiquarian Press, Ltd., New York.

Drucker, Phillip

1937 The Tolowa and their Southwest Oregon Kin. University of California Publications in American Archaeology and Ethnology, 36:221-300. Berkeley.

Flenniken, J. Jeffrey

1987 The Lithic Technology of the East Lake Site, Newberry Crater, Oregon. Report to the Deschutes National Forest by Lithic Analysts, Pullman, Washington.

Franklin, Jerry and C.T. Dyrness

1973 Natural Vegetation of Oregon and Washington. USDA Forest Service General Technical Report PNW-8. Pacific Northwet Forest and Range Experiment Station, US Department of Agriculture, Portland, Oregon.

Hanes, Richard

1976 Umpqua Valley Prehistory; A First Step Toward Understanding Aboriginal Adaptations to the Southwest Oregon Interior Region. Manuscript on file at the Bureau of Land Mangagement, Roseburg District, Roseburg, Oregon.

1977 Archaeological Survey of the Umpqua Valley: A First Year Report. Paper presented at the 30th Annual Northwest Anthropological Conference, April 9, 1977. Victoria, British Columbia.

Hoijer, Harry

1956 The Chronology of the Athapascan Languages. International Journal of American Linguistics, 22:4:219-232.

1960 Athapaskan Languages of the Pacific Coast. In Culture in History: Essays in Honor of Paul Radin, S. Diamond (ed), pp. 960-976. Columbia University Press, New York.

Honey, William D. and Thomas C. Hogg

1980 Cultural Resources Overview, Umpqua National Forest and Bureau of Land Management, Roseburg District. Department of Anthropology, Oregon State University, Corvallis.

Lauman, Jim E. et al.

1972 Fish and Wildlife Resources of the Umpqua Basin, Oregon and Their Water Requirements. Oregon State Game Commission, Portland.

Lyman, R. Lee

1985 Archaeological and Geoarchaeological Investigations at the Sylmon Valley School Site (35DO275), Southwestern Oregon. Report prepared for the Roseburg Sanitary Authority by the Department of Anthropology, Oregon State University, Corvallis.

Minor, Rick

1983 Archaeological Testing at the South Umpqua Falls Roskshelters: A Preliminary Report. Report to the Umpqua National Forest by Heritage Research Associates, Eugene. HRA Report No. 17.

1985 Paleo-Indians in Western Oregon: A Description of Two Fluted Projectile Points. Northwest Anthropological Research Notes, 19:1:33-40.

Minor, Rick and Thomas J. Connolly

1987 Archaeological Testing at Times Square Rockshelter, Douglas County, Oregon. Report to the Umpqua National Forest by Heritage Research Associates, Eugene. HRA Report No. 55.

Oetting, Alber C.
1987 Archaeological Testing at Five Sites in the Stinkingwater Mountains, Harney County, Oregon. Oregon State Museum of Anthropology Report 87-4, University of Oregon, Eugene.

O'Neill, Brian L.
1987a The Tyee Burial Site (35DO393): A Late Archaic Burial in the Middle Umpqua River Basin. Report on file at the Oregon State Museum of Anthropology, University of Oregon, Eugene.

1987b The Narrows Site: A Middle and Late Archaic Fishery in the Umpqua River Basin. Paper presented at the Third Annual Oregon Archaeology Conference sponsored by the Association of Oregon Archaeologists, November 6-7, 1987. Ashland, Oregon.

O'Neill, Brian and Isaac Barner
1987 Martin Creek and the Narrows: Late Archaic Occupations in the Umpqua Basin. Paper presented at the 11th Annual State of Jefferson Meeting on Archaeology and History, March 5-6, 1987. Ashland, Oregon.

Pettigrew, Richard M.
1980 Archaeological Investigations at the Looney Site (35DO13), Douglas County, Oregon. *University of Oregon Anthropological Papers*, No. 18. Eugene.

1982 Archaeological Investigations in Mill Creek Valley, Crook County, Oregon. *University of Oregon Anthropological Papers*, No. 26. Eugene.

Riddle, George W.
1968 *History of Early Days in Oregon*. Reprinted from the Riddle Enterprise as a facsimile reproduction, The Shorey Book Store, Seattle, Washington.

Schreindorfer, Crystal S.
1985 Marial: 1984, Archaeological Investigations at 35CU84. Report to the Bureau of Land Management, Medford District by the Department of Anthropology, Oregon State University, Corvallis.

Simmons, Alexy
1985 Ethnography and History. *In* Archaeological and Geoarchaeological Investigations at the Sylmon Valley School Site (35DO275) Southwestern Oregon, R.L. Lyman (ed), pp. 3.1-3.18. Prepared for the Roseburg Sanitary Authority, Roseburg, Oregon by the Department of Anthropology, Oregon State University, Corvallis.

Skinner, Craig E.
1983 Obsidian Studies in Oregon. Unpublished MA thesis, Department of Interdisciplinary Studies, University of Oregon, Eugene.

Sullivan, Alan P. III and Kenneth C. Rozen
1985 Debitage Analysis and Archaeological Interpretation. *American Antiquity* 50:4:755-779.

Wert, S.R. et al.
1977 Soil Inventory of the Roseburg District. Bureau of Land Management, Roseburg District, Roseburg, Oregon.

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Archaeological Evaluation of the Powerline Site (35DO398): A Chipping Station in the Upper Umpqua Basin, Douglas County, Oregon

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Roseburg District

February 1988

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ABSTRACT

This report presents the results of test excavations conducted at the Powerline site (35DO398) by the Roseburg District Bureau of Land Management during September, 1987. The site is situated on a ridge crest at an elevation of 2880 feet above sea level in the upper Umpqua Basin, Douglas County, Oregon. A series of test pits was excavated adjacent to abandoned caterpillar tracks. The cultural deposits were found to be sparsely scattered. While no formed tools were recovered from the site, an analysis of the debitage recovered at this site suggests that it served as a chipping station where core reduction was undertaken.

INTRODUCTION

The Powerline site (35DO398) is located in the SE 1/4SW 1/4, Section 29, T26S, R2W, Willamette Meridian, on land administered by the Bureau of Land Management. It was discovered in May 1987 as part of a pre-sale timber inventory (Barner 1987). Lithic debris was found within and adjacent to abandoned caterpillar roads in a previously harvested tract of land.

The site is situated on a ridge crest, known locally as Thunder Ridge, at an elevation of 2880 feet above sea level (Figure 9.1). The North Umpqua River lies approximately 2.0 miles to the north of the site.

Testing at the site included the excavation of six test pits. Two of the test pits contained a moderate density of cultural material consisting entirely of CCS waste flakes. The only tool recovered was a utilized flake.

ENVIRONMENTAL BACKGROUND

The North and South Umpqua rivers have their origin in the Upper Umpqua Basin at approximately 6,000 feet. The Powerline site (35DO398) is located in the upper basin, which includes the mountainous regions upstream from the communities of Tiller and Idleyld.

This portion of the Upper Umpqua Basin lies within the Western Cascades physiographic province, characterized as containing generally rugged terrain. Tuffs, breccias, and agglomerates are abundant in the central portion of the province and "between the McKenzie and South Umpqua rivers, approximately three-fourths of the total area is made up of pyroclastic rocks" (Franklin and Dyrness 1973:24). Baldwin describes the region as composed of predominantly Eo-Oligocene flows and tuffs which are, to the east, overlain by more recent Plio-Pleistocene flows and tuffs (1981:70).

The climate of the Umpqua Basin is characterized by mild, wet winters and hot, dry summers. Average temperatures recorded at Roseburg are 40^{o} F in January and 68^{o} F in July, with extremes of minus 1^{o} F in January and 106^{o} F in July. Average annual precipitation, reflecting the orographic barriers of the Coast and Cascade ranges, varies from 40 to 60 inches and falls mainly as winter and spring rain. Snow is infrequent at lower elevations but accounts for much of the winter precipitation at higher elevations. Above the 1000 foot level several light snowfalls usually cover the ground. Snow will persist most of the winter months at elevations of 3,000 - 4,000 feet, and significant amounts of snow are received by the higher peaks in the vicinity of the site -- such as Thunder Mountain (Wert et al. 1977:25).

This portion of the Upper Umpqua Basin (i.e. the North Umpqua drainage) lies at the southern extent of the Tsuga heterophylla vegetation zone (Franklin and Dyrness 1973:45, 70-88). The vegetation in the vicinity of the site is consistent with the associations described for this zone and include Douglas fir, Grand fir, cedar, madrone,

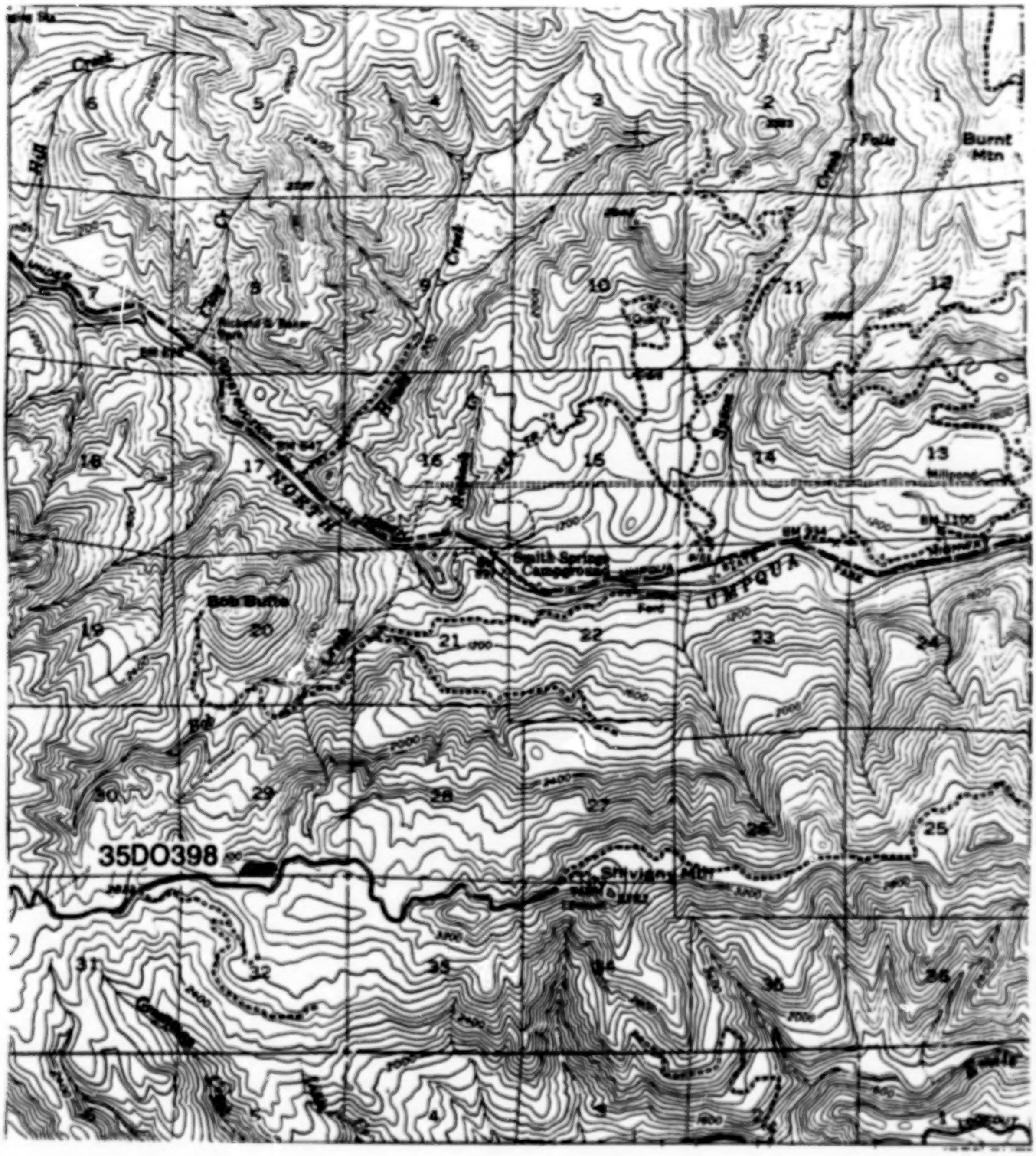

Figure 9.1. Location of the Powerline site (35DO398) in Douglas County, Oregon (USGS Mace Mtn. 15' quadrangle).

chinquapin, hemlock, rhododendron, ocean spray, manzanita, salal, Oregon grape, thimbleberry, trailing blackberry, huckleberry, bear grass, and bracken fern.

Wildlife inhabiting the basin includes Roosevelt elk, black-tailed deer, black bear, river otter, beaver, marten, muskrat, raccoon, brush rabbit, and porcupine. Avian species within the region include California and mountain quail, blue and ruffed grouse, mourning dove, wood duck, common merganser, bald eagle, and pileated woodpecker (Lauman et al. 1972).

ARCHAEOLOGICAL AND ETHNOGRAPHIC BACKGROUND

The antiquity of human occupation in western Oregon is only suggested by the discovery of isolated fluted points. Dated elsewhere in North America to as old as 11,500 years ago and associated with big game hunters and extinct Rancholabrean megafauna, several of these distinctive artifacts have been found on the west side of the Cascades (Minor 1985). In the Umpqua Basin, along the North Umpqua River, two fluted points were found by a local collector (Hanes 1976; Minor 1985).

Radiocarbon dated sites in western Oregon, while not containing evidence of Paleoindian occupation, do help confirm the likelihood of materials of such antiquity. On the floodplain of the Long Tom River in the upper Willamette Valley a date of nearly 9,000 years ago was returned on charcoal from an amorphous hearth-like feature which was associated with lithic cultural material (Connolly 1987). In the Rogue River Basin to the south of the Umpqua Basin, excavations at the Marial site have discovered an occupation dating to approximately 8,500 years ago (Schreindorfer 1985).

The oldest radiocarbon dated site in the Umpqua Basin (Figure 9.2) is the Middle Archaic component at the Narrows Site, which is approximately five miles northwest of the Powerline site. Located at the site of an aboriginal fishery, this component is dated to 6270 BP and contains choppers, a hammerstone, utilized flakes, an endscraper, and a biface fragment. The two projectile points recovered from this component include an asymmetrical broad-stemmed specimen and a convex-base foliate specimen. A second Middle Archaic component at the Narrows site, with a date of 5090 BP, includes a variety of chipped and ground stone tools. The majority of the classifiable projectile points recovered from this component are broad-stemmed specimens and include both corner- and side-notched varieties. Stone bowl mortar fragments and pestles indicate that the processing of vegetal foods occurred at the site during this period of occupation (O'Neill 1987b).

Other radiocarbon dated, Middle Archaic components have been discovered in the middle and upper Umpqua Basin. These include Times Square Rockshelter (Minor and Connolly 1987), South Umpqua Falls (Minor 1983), and the Reynolds site (Churchill 1986). The assemblages of these components typically contain broad-necked projectile points and lanceolate or foliate-shaped varieties.

Radiocarbon dated sites assignable to the Late Archaic period are also present in the middle and upper Umpqua Basin. These sites are South Umpqua Falls (Minor 1983), the Narrows site (O'Neill 1987b), Crispen Ranch (Baxter and Minor 1987), Martin Creek site (O'Neill and Barner 1987), and Limpy Rock Shelter (Baxter 1987). Artifact assemblages from Late Archaic age components typically contain small side-notched points and narrow-necked points, which may be barbed or tanged. Bone tools and a baked clay figurine fragment have also been recovered. Two Late Archaic period burials have been excavated. Both were found to have been tightly flexed and placed in prepared basin-shaped pits (O'Neill 1987a; O'Neill 1987b). One of these burials was accompanied by a broken, spatulate-shaped ground slate club (O'Neill 1987a). The earliest date for Late Archaic period assemblages in the Umpqua Basin comes from the Crispen Ranch site (35DO36), with a date of 620 BP.

At the time of Euroamerican contact the Umpqua Basin was occupied by at least five aboriginal groups (Figure 9.3). One of these groups, the Athapascan Upper Umpqua, inhabited a large portion of the basin -- from Scottsburg to the Cascades (Honey and Hogg 1980:66-76; Beckham 1986:27-39) -- and presumably inhabited the

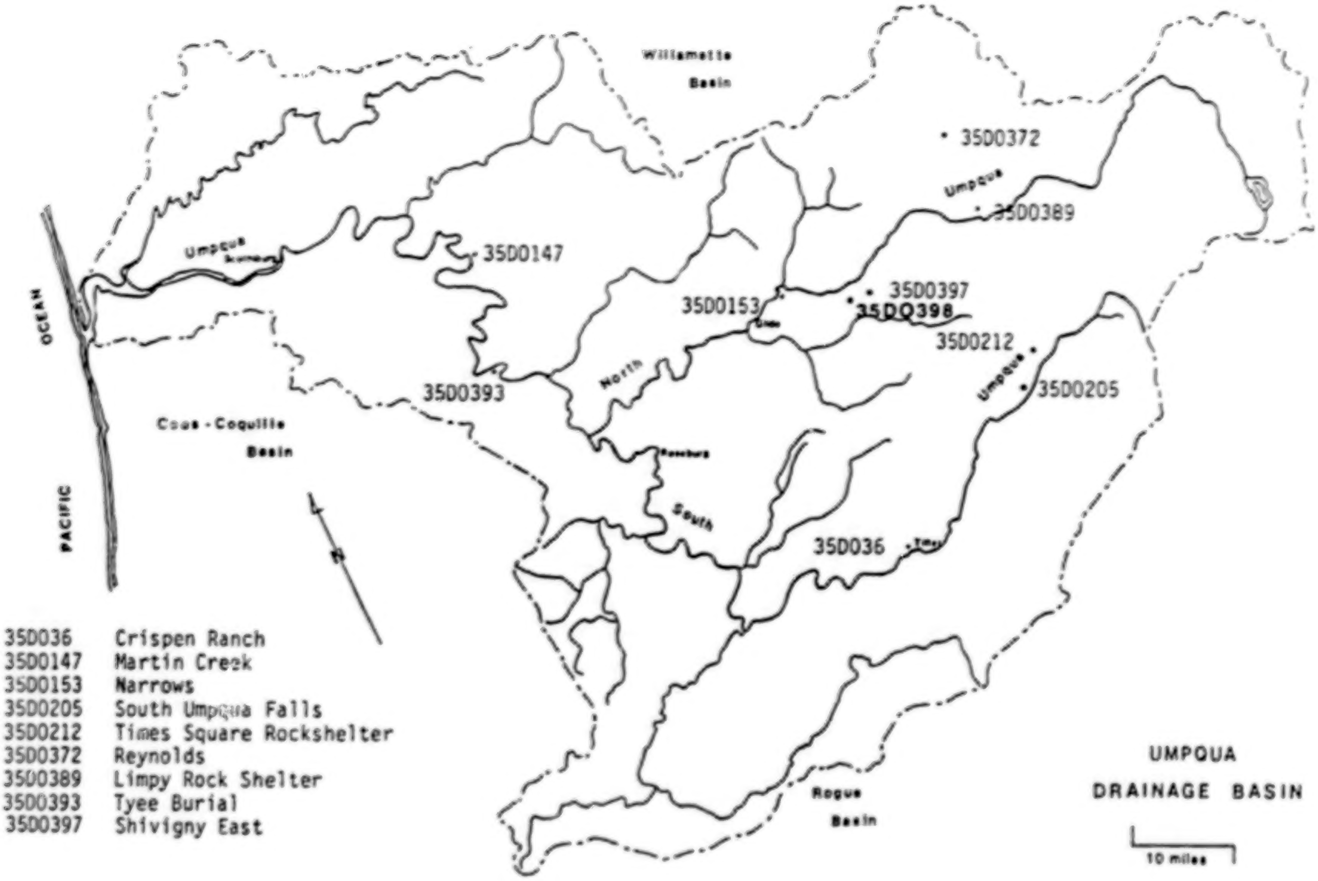

Figure 9.2 Location of Umpqua Basin archaeological sites mentioned in text.

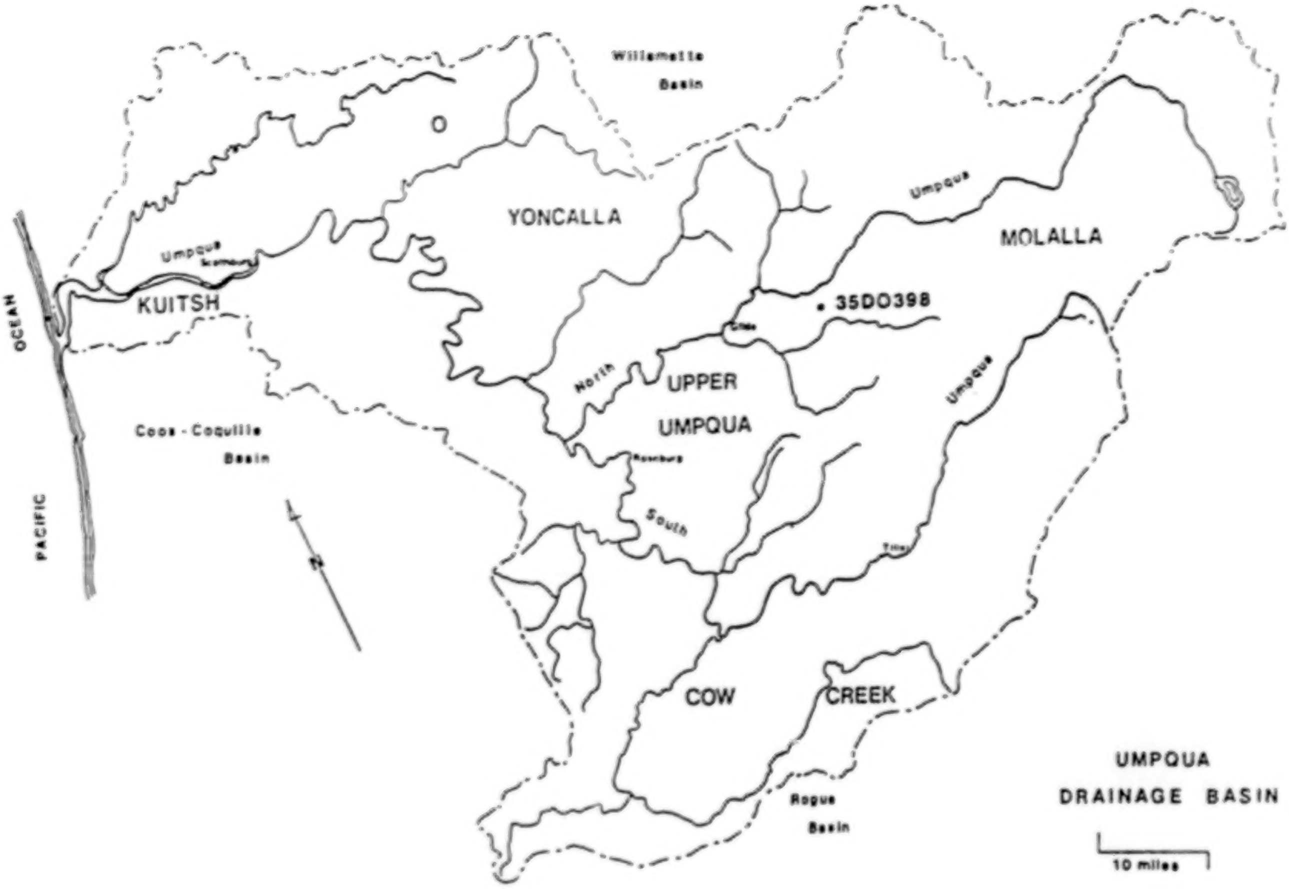

Figure 9.3. Distribution of Indian groups in the Umpqua Basin at the time of contact (after Beckham 1986).

region in the vicinity of the Powerline site. The Upper Umpqua Indians shared a common language and culture with other Athapascan speakers occupying a crescent-shaped area which includes coastal drainages south to the Smith River region of northern California. Linguistic evidence suggests that Athapascan speakers migrated from their NaDene homeland in the western subarctic to the southwest Pacific Coast at approximately AD 900 (Hoijer 1956, 1960). While there were regional variations in dialect, there were only minor differences in subsistence pursuits, material culture, and ceremony among these Pacific Athapascan groups (Drucker 1937:285).

The Indians of southwestern Oregon and northwestern California lived in politically and economically autonomous villages comprised largely of patrilineally related kin. There was no formal political organization above the village level, although alliances between groups could be formed and strengthened by the purchase of brides from neighboring groups (Drucker 1937). Within these villages a "big man" helped direct affairs and settle disputes. His position was achieved through the strength of his personality as well as the possession of wealth and its strategic redistribution.

Complementary settlement-subsistence models have been proposed for the aboriginal inhabitants of the Umpqua Basin (cf. Hanes 1977:5-8; Simmons 1985:3.2-3.5). Both of these models are ecologically based and entail the seasonal movement of people which, depending upon assumptions dealing with the relative abundance of local resources, may have been substantial or not.

According to Simmons, winter villages were located adjacent to the river and its principal tributaries, and were occupied during the winter months. With the coming of spring, temporary camps were established from which camas, berries, and game might be procured. From July through September, small upland camps were occupied. During these summer and early fall months, a wide variety of resources were available including camas, tarweed seed, sugar pine nuts, acorns, berries, insects, water fowl, and large and small game. According to this model, temporary fishing camps were occupied during October and November. In December the Indians retreated to their winter village, where collected foods had been stored (Simmons 1985:3.2-3.5).

Hanes notes that winter villages are located in the valley lowlands in regions where the distribution of major resources co-occur during the fall months. These major resources include acorns, camas, and fish. The latter two resources also occur in the spring. According to this model, the winter villages are probably not abandoned, but continue to be occupied by some portion of the patrilineal band during the entire year. Small groups exploited the resources of the mountainous upland regions of the basin during the summer. These resources would have included berries and terrestrial game (Hanes 1977:5-8).

Early accounts suggest that big game animals such as deer, elk and bear were plentiful in the basin (Douglas 1959). Of these, deer seemed to have been an important and fairly reliable source of food and clothing. It has been suggested that one of the reasons for the annual burning of grasslands by the Indians was to encourage deer to utilize convenient hunting spots. Deer were hunted in a variety of ways. A deer-head camouflage might be used to stalk a deer which would then be dispatched using a bow and arrow. Salt licks and springs were favorite spots from which to hunt deer. Communal drives might also be organized. These would entail the construction of long brush fences, or barriers, across the head of a canyon. Openings would be left in these fences and fiber rope snares placed in them (Riddle 1968).

While southwest Oregon and the Umpqua Basin still remain an "archaeological frontier" (Aikens 1984:122) wherein much basic research still needs to be conducted, the recent spate of investigation in the basin is helping to ameliorate the situation. Because the ethnographic record of the native inhabitants of the Umpqua Basin is extremely limited, archaeological investigation in the region assumes added importance as a method of reconstructing the lifeways of the basin's original occupants.

PROCEDURE AND RESULTS

Lithic debris was discovered during an inventory of the area in May 1987. This material, which included CCS, obsidian, and basalt debitage, was found in and adjacent to overgrown roadways that criss-crossed the ridge where previous logging had taken place. Visibility within these tracks was good to moderate. Elsewhere, the surface is obscured by ground cover vegetation and duff.

Subsurface evaluation of site 35DO398 was conducted by the Roseburg District BLM on September 10, 17 and 21, 1987. Testing included the excavation of six 1x1 meter test pits (TP). Each of these was excavated in 10 cm levels and the fill was passed through 1/4 inch hardware cloth. Approximately 1.6 m^3 were excavated.

The test pits were excavated in order to determine if subsurface cultural deposits remained in this disturbed setting.

Stratigraphy

The soils in the vicinity of the site have been identified as belonging to the Honeygrove/Shivigny Association. Soils of these series are Typic Haplohumults. They are found on old stable land surfaces, particularly over volcanic rocks of the Little Butte Formation -- which includes tuff, breccia and some andesite bedrock. The well-drained, red, clayey Honeygrove soils are found primarily on broad, rounded ridgetops and ridge noses. The thickness of this soil may be as little as forty inches or greater than five feet (Wert et al. 1977:46, 381-2, 397-400).

Test excavations at the Powerline site revealed that the soils along the ridge crest vary in depth. In places, bedrock is exposed at the surface, particularly to the north and east of TPs 1 and 1-W along the proposed route of the 26-2-29.3 Road. Decomposing basalt was encountered at a depth of approximately 15-20 cm in TPs 3 and 4 to the west of the 26-2-32.2 Road. Bedrock was not encountered in TPs 1 and 1-W, which were excavated to 35 cm below the surface.

A single soil stratum was encountered during the test excavations at 35DO398. It is generally a reddish-brown silt which contains many small roots in the upper 10 cm (Figure 9.4). Angular, gravel-sized pieces of volcanic stone were common in the fill; cobble-sized pieces less so.

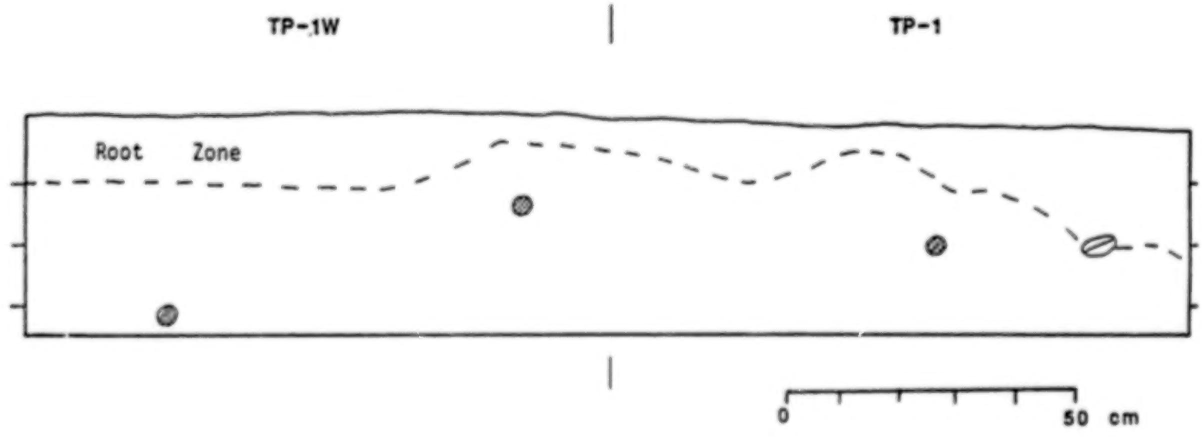

Figure 9.4. North profile of TPs 1 and 1W, 35DO398.

Excavation

Five of the six 1x1 meter test pits excavated at 35DO398 were placed adjacent to abandoned roadways where lithic debris had been observed during the original pedestrian survey (Figure 9.5). The sixth, TP-5, was placed in a dense, mixed stand of hemlock, cedar and Douglas fir where the surface appeared less disturbed than elsewhere in the project area.

TP-1 and TP-1W, adjacent 1x1 test pits, were placed approximately five meters north of sta. P3+59 of the proposed 26-2-29.3 Road. The ground surface in this area was disturbed and the old roadway was apparent. These test units were excavated to a depth of 35 cm below the surface, the first level of each being 15 cm in thickness. The cultural material recovered from these units, summarized in Table 1, was found to be moderately dense in the upper 25 cm and included 54 pieces of CCS debitage. No formed tools were recovered. Flecks of charcoal and burnt earth were observed at a depth of 30-35 cm and, because there was no discernable pattern, was considered to have been of natural origin.

			Debitage			Tools				
Unit	Level	OBS	CCS	BAS	OBS	CCS	BAS	OTH	TOTAL	(item/m^3)
TP-1	1		16						16	107
	2		8						8	80
	3		2						2	20
		—	—	—	—	—	—	—	—	
		0	26	0	0	0	0	0	26	
TP-1W	1		11						11	73
	2		13						13	130
	3		4						4	40
		—	—	—	—	—	—	—	—	
	0	28	0	0	0	0	0	0	28	
TP-2	1		1						1	10
	2								0	0
		—	—	—	—	—	—	—	—	
		0	1	0	0	0	0	0	1	
TP-3	1							1	1	10
	2								0	0
		—	—	—	—	—	—	—	—	
		0	0	0	0	0	0	1	1	

* TPs 4 and 5 contained no cultural material

Table 9.1 Summary of cultural material recovered from test pits at site 35DO398.*

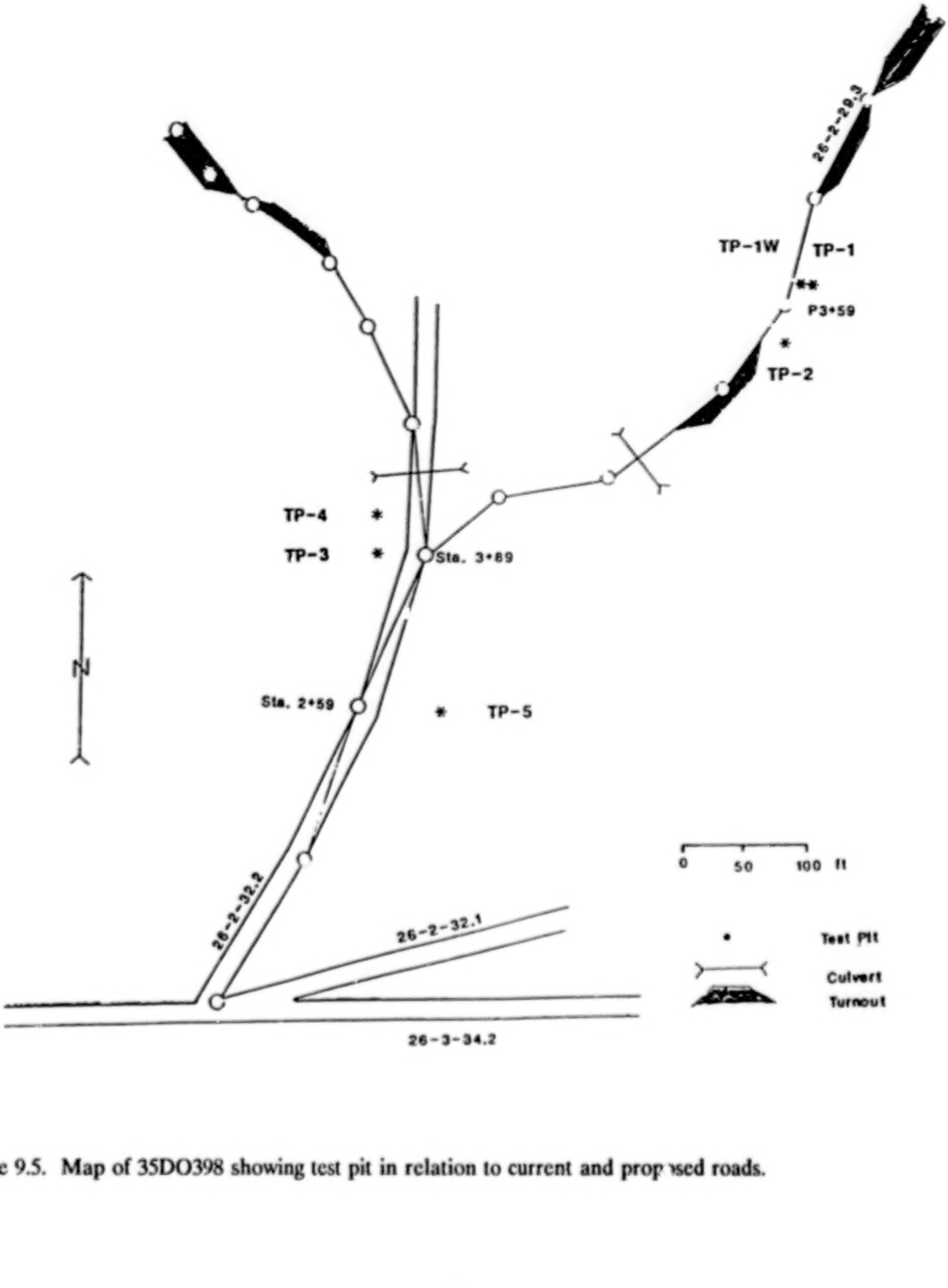

Figure 9.5. Map of 35DO398 showing test pit in relation to current and proposed roads.

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TP-2 was placed approximately 15 meters south of TPs 1 and 1W, in an area where the ground surface had been disturbed. It was excavated to a depth of 20 cm, at which time it was terminated due to a lack of cultural material. One piece of CCS debitage was recovered from Level 1.

TPs 3 and 4 were placed on a slight rise approximately 5 meters to the west and overlooking the 26-2-32.2 roadway. A few pieces of obsidian debitage had been observed at this point during the survey. The test pits were spaced ten meters apart. TP-3 was excavated to a depth of 20 cm where many angular, cobble-sized pieces of basalt were encountered. The only cultural material recovered from this test pit was a utilized flake of white solution quartz found in Level 1. TP-4 was excavated to 25 cm below the surface where large, angular pieces of basalt were again encountered. No cultural material was recovered from TP-4.

TP-5, located approximately 20 meters east of sta. 2+59 of the 26-2-32.2 Road, was excavated to a depth of 25 cm. No cultural material was observed in the fill of this test pit.

ARTIFACT ANALYSIS

Recovered during the evaluation of the Powerline Site were one utilized flake and 55 pieces of lithic debitage. No formed tools were observed during the original pedestrian survey or recovered during the subsurface evaluation.

The utilized flake is a piece of solution quartz from which flakes have been struck, resulting in a sharp, pointed edge which shows minimal signs of wear. Most of the surface of specimen TP-3/1-1 is covered by cortex. The pointed end of this expedient tool may have been used for drilling or engraving wood or bone. The edge from which small flakes have spalled would have been suitable for shaving these same sorts of materials. Specimen TP-3/1-1 measures 23 mm in length.

Each of the 55 pieces of debitage collected from the Powerline Site was categorized according to its a) material type, b) reduction stage, c) completeness, and d) size. This scheme is a modification of one proposed by Sullivan and Rozen (1985) and is currently being used by others conducting research in the Umpqua Basin (cf. Baxter 1987; O'Neill 1988) and elsewhere in Oregon (cf. Oetting 1987).

CCS is the only material represented in the lithic debitage at 35DO398. At the site it is found in a variety of colors including red, grey and black. Unlike obsidian (cf. Skinner 1983), CCS commonly occurs in the region and, at nearby archaeological sites, generally comprises the majority of the waste material (cf. Baxter 1987; O'Neill 1988). Because CCS is ubiquitous in the region, no specific source may be postulated for the material found at the Powerline Site. On the other hand, the obsidian observed at the Powerline Site during the survey may have been transported some distance. Recent obsidian sourcing of specimens collected from archaeological sites in the Upper Umpqua Basin have shown that distant sources were exploited. The two most common sources, as determined by X-ray fluorescence of trace elements, were in the Newberry Crater region of the eastern Fort Rock Basin and the Silver Lake/Sycan Marsh region of south central Oregon (S. Berryman 1987; J. Berryman 1987).

Four lithic reduction stage classifications were used to separate the debitage. These include

a) primary flakes are those with cortex covering the entire dorsal surface;
b) secondary flakes contain cortex on a portion of the dorsal surface;
c) interior flakes are free of cortex;
d) debris, also referred to as "angular waste," does not share the morphological characteristics of flakes -- i.e. striking platform, bulb of percussion, etc.

The majority of the debitage at the Powerline Site consisted of interior flakes (Table 9.2) with platforms absent (Table 9.3). Debris comprised a sizeable (42%) proportion. The debitage recovered was no larger than 3mm in diameter, with the vast majority of this being in the 1 to 2 mm range (Table 9.4). For purposes of intersite comparison it should be remembered that 1/4 inch mesh was employed in the field to recover the cultural material.

The sizeable proportion of broken flakes and debris in the assemblage indicates that percussion flake removal was probably being done at the site. This might indicate some kind of core reduction was being performed, regardless of the noticeable lack of cortex bearing flakes.

DISCUSSION AND SUMMARY

The Powerline Site lies at an elevation of 2880 feet above sea level along a ridge crest overlooking the North Umpqua River in the upper Umpqua Basin. A mixed vegetation community, characteristic of the *Tsuga heterophylla* zone, covers the area. Clearcut logging and activities associated with the removal of the downed trees have heavily impacted the site area.

Test excavations at 35DO398 included the systematic excavation of six test pits from which 55 pieces of lithic debitage and one utilized flake were recovered. No other tools were observed or collected. In two of the test pits the density of cultural material was moderate, with a maximum rate of 130 items per cubic meter observed in a single 10 cm level.

Stratigraphic profiles of the test excavations and a review of the vertical distribution of the cultural material (Figure 9.5) do no suggest the presence of more than one cultural component. The majority of cultural material was found from 0-25 cm below the surface in two test pits placed in the northeastern portion of the project area. No charcoal was collected and no cultural features were observed.

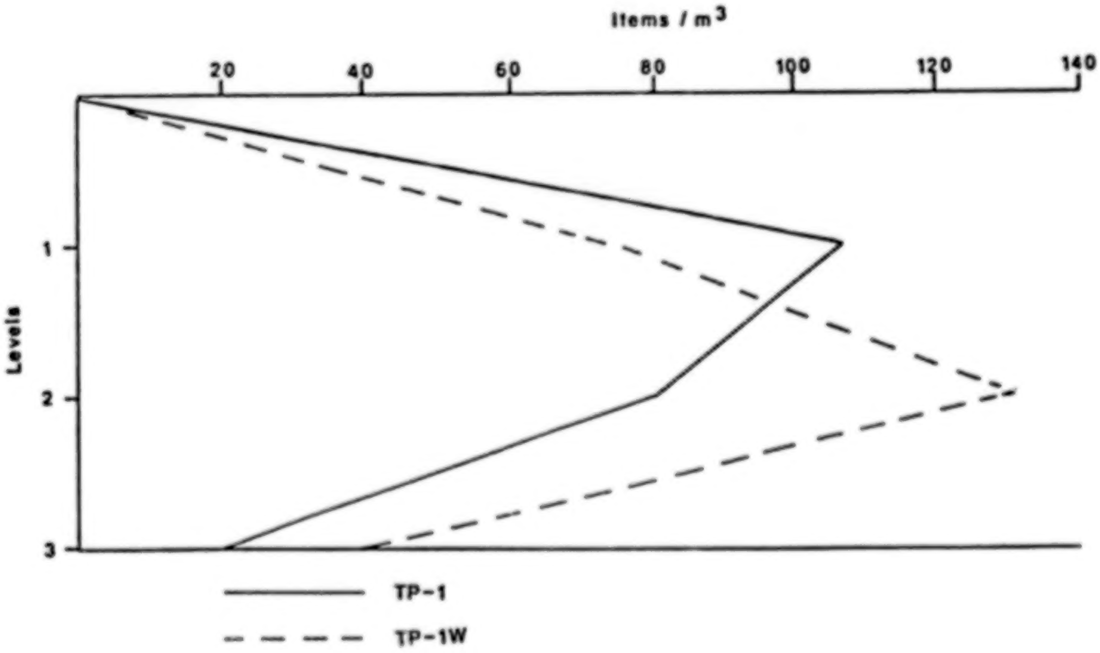

Figure 9.6. Vertical distribution of cultural material in TPs 1 and 1 W.

	Stage				
	Primary	Secondary	Interior	Debris	Total
CCS	1	0	31	23	55
	(1.8)	(0)	(56.4)	(41.8)	

n / (%)

Table 9.2 Summary of debitage by reduction stage.

	Platform			
	Present	Absent	Debris	Total
CCS	5	27	23	55
	(9.0)	(49.0)	(42.0)	

n / (%)

Table 9.3. Summary of debitage by presence or absence of platform.

	Flake Size						
	1	2	3	4	5	>5	Total
CCS	22	27					55
	(40.0)	(49.0)	(11.0)				

n / (%)

Table 9.4. Summary of debitage by size.

Given the presence of lithic debitage, composed primarily of broken flakes and debris (angular waste), coupled with the profound lack of formed tools, the Powerline site is interpreted to be a temporarily occupied chipping station. It is assumed that cores of raw material, in this case CCS, were purposefully broken to produce flakes that could then be made into tools.

Because no charcoal was collected and no diagnostic artifacts were recovered, a temporal range of occupation for this site is impossible. The possibility of ascertaining a relative date by obsidian hydration is precluded by the absence of obsidian in the recovered lithic debitage assemblage.

The Powerline site (35DO398) meets neither the criteria for significance listed at 36 CFR 60.4d nor the Oregon SHPO's criteria for significance. Although the site represents part of the settlement / subsistence pattern of the aboriginal occupants of the upper Umpqua Basin, it is unlikely that the lithic debitage found at 35DO398 will provide information important to answering current questions dealing with the prehistory of the region. Not only does the site not contain a dense cultural deposit, but the site area is greatly disturbed and there is little likelihood of being able to assign a date to the site.

REFERENCES CITED

Aikens, C. Melvin
1984 Archaeology of Oregon. U.S. Department of Interior, Bureau of Land Management, Oregon State Office.

Baldwin, Ewart M.
1981 Geology of Oregon, 3rd ed. Kendall/Hunt Publishing Company, Dubuque, Iowa.

Barner, Isaac N.
1987 Cultural Resource Inventory Record for Powerline, Site 35DO398. On file at the Roseburg District BLM, Roseburg, Oregon.

Baxter, Paul W.
1987 Archaeological Testing at Limpy Rock Shelter: An Upland Hunting Camp in the North Umpqua Valley. Report to the Umpqua National Forest by Heritage Research Associates, Eugene, Oregon. HRA Report No. 65.

Baxter, Paul W. and Rick Minor
1987 US Sprint Fiber Optic Cable Project Oroville, California to Eugene, Oregon. Archaeological Testing of Seven Sites in Oregon; Addendum #3 to the Technical Report. Report to US Sprint by Heritage Research Associates, Eugene. HRA Report No. 63.

Beckham, Stephen Dow
1986 Land of the Umpqua: A History of Douglas County, Oregon. Douglas County Commissioners, Roseburg, Oregon.

Berryman, Judy A.
1987 Archaeological Site Evaluation of the Little Oak Flat Site, Umpqua National Forest, Roseburg, Oregon. Report to the Umpqua National Forest by TMI Environmental Services, San Diego, California.

Berryman, Stanley R.
1987 Archaeological Site Evaluation of 35DO265, the Apple Creek Site, Umpqua National Forest, Roseburg, Oregon. Report to the Umpqua National Forest by TMI Environmental Services, San Diego, California.

Churchill, Thomas E.
1986 Archaeological Investigations of the Reynolds Site (35-DO-372). Report to the Umpqua National Forest by Coastal Magnetic Search & Survey, Salem, Oregon.

Connolly, Thomas J.
1987 Recent Highway Archaeology Work in Oregon. Paper Presented at the Association of Oregon Archaeologists 3rd Annual Conference, Ashland, Oregon. November 6-7, 1987.

Douglas, David
1959 Journal Kept by David Douglas During His Travels in North America 1823-1827. Antiquarian Press, Ltd., New York.

Drucker, Phillip

1937 The Tolowa and their Southwest Oregon Kin. University of California Publications in American Archaeology and Ethnology, 36:221-300. Berkeley.

Franklin, Jerry and C.T. Dyrness

1973 Natural Vegetation of Oregon and Washington. USDA Forest Service General Technical Report PNW-8. Pacific Northwet Forest and Range Experiment Station, US Department of Agriculture, Portland, Oregon.

Hanes, Richard

1976 Umpqua Valley Prehistory; A First Step Toward Understanding Aboriginal Adaptations to the Southwest Oregon Interior Region. Manuscript on file at the Bureau of Land Management, Roseburg District, Roseburg, Oregon.

1977 Archaeological Survey of the Umpqua Valley: A First Year Report. Paper presented at the 30th Annual Northwest Anthropological Conference, April 9, 1977. Victoria, British Columbia.

Hoijer, Harry

1956 The Chronology of the Athapascan Languages. International Journal of American Linguistics, 22:4:219-232.

1960 Athapaskan Languages of the Pacific Coast. In Culture in History: Essays in Honor of Paul Radin, S. Diamond (ed), pp. 960-976. Columbia University Press, New York.

Honey, William D. and Thomas C. Hogg

1980 Cultural Resources Overview, Umpqua National Forest and Bureau of Land Management, Roseburg District. Department of Anthropology, Oregon State University, Corvallis.

Lauman, Jim E. et al.

1972 Fish and Wildlife Resources of the Umpqua Basin, Oregon and Their Water Requirements. Oregon State Game Commission, Portland.

Minor, Rick

1983 Archaeological Testing at the South Umpqua Falls Roskshelters: A Preliminary Report. Report to the Umpqua National Forest by Heritage Research Associates, Eugene. HRA Report No. 17.

1985 Paleo-Indians in Western Oregon: A Description of Two Fluted Projectile Points. Northwest Anthropological Research Notes, 19:1:33-40.

Minor, Rick and Thomas J. Connolly

1987 Archaeological Testing at Times Square Rockshelter, Douglas County, Oregon. Report to the Umpqua National Forest by Heritage Research Associates, Eugene. HRA Report No. 55.

Oetting, Albert C.

1987 Archaeological Testing at Five Sites in the Stinkingwater Mountains, Harney County, Oregon. Oregon State Museum of Anthropology Report 87-4, University of Oregon, Eugene.

O'Neill, Brian L.

1987a The Tyee Burial Site (35DO393): A Late Archaic Burial in the Middle Umpqua River Basin. Report on file at the Oregon State Museum of Anthropology, University of Oregon, Eugene.